december 1954

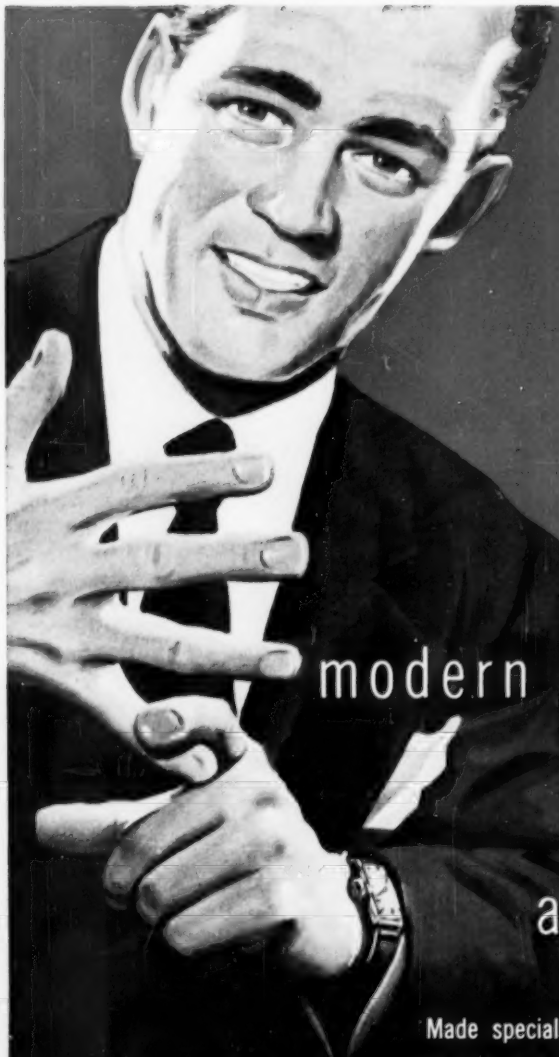
office management

the magazine for management executives

Teletype Room, ALCOA—heart of a data processing system

featuring

- ALCOA inaugurates integrated data processing—*system outlined*
- AMA conference concentrates on computers—*reports on two*
- Electronics dominates SPA conference—*major meetings*



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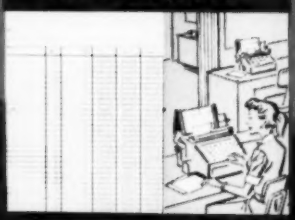

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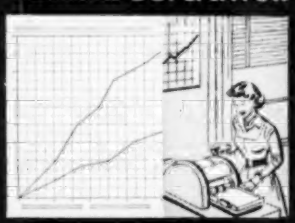

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office management

Office Methods, Equipment, Personnel, and Purchasing
Sponsor of the "Office of the Year" Awards

december, 1954

Volume XV No. 12

ANOTHER "Office of the Year" winner makes a highly significant contribution to the advance of data processing!

The editors of this magazine believe that the article beginning on page 12 of this issue, wherein Ralph W. Fairbanks reports on a new installation at the offices of the Aluminum Co. of America in Pittsburgh, very well supplements our report earlier this year on pioneering office automation at the Award-winning offices of United States Steel in the same city.

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M. A. Geyer, President; Donald McAllister, Vice-President and General Manager; Thomas V. Murphy, Editor; Hugh Ward, Advertising Director; John M. Smythe, Midwest Manager; Robert M. Smith, Managing Editor; Robert Beeman, Walter A. Kleinschrod, Alvin M. Hattal, Marguerite Polyniak, Robert G. Black, George A. Tice, Associate Editors.

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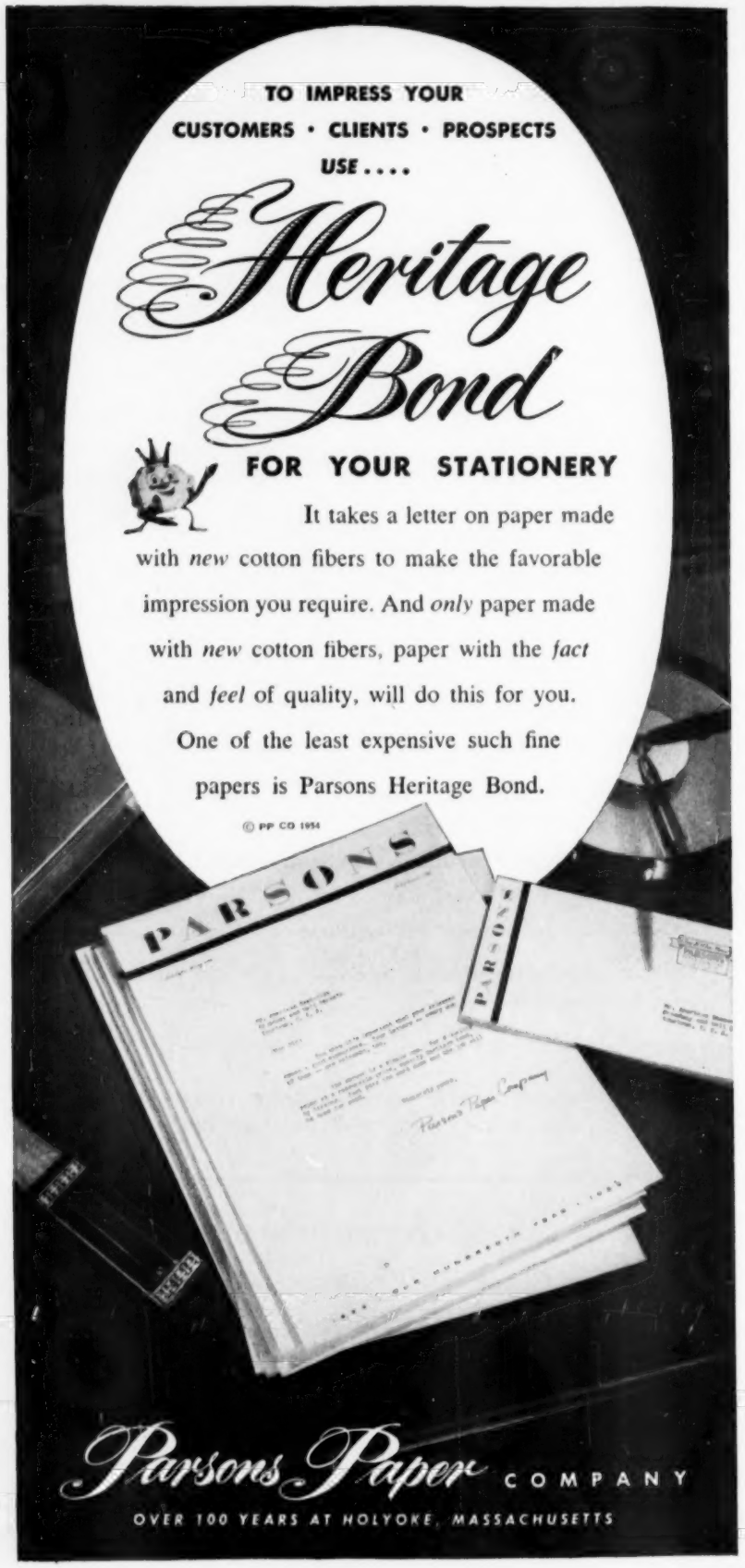
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Burroughs shows high-speed printer, desk-size computer

A new electronic high speed printing and accounting machine, designed to print 900 lines a minute, was exhibited to the public for the first time at the Seventh Annual International Systems Meeting of the Systems and Procedures Association of America, held recently at New York's Hotel Commodore.

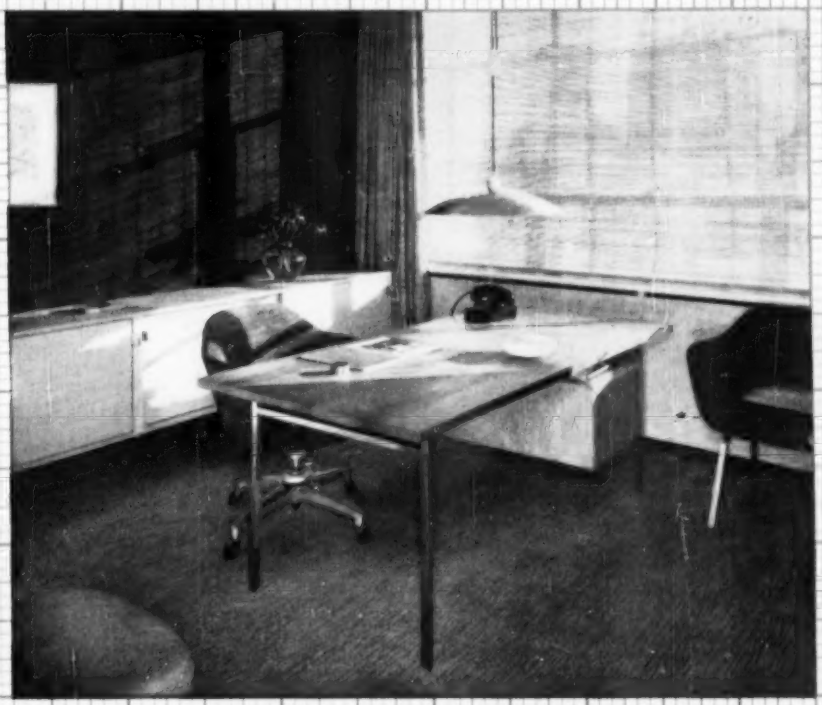
The new printer is manufactured by the Burroughs Corp. of Detroit, and is known as the Series "G." It consists of a decoding console, a card analyzer, a printer, and a printer punch. In addition to printing at a rate of 900 lines a minute, it is designed to punch cards simultaneously at the same speed. It can create up to seven carbon copies, and it is capable of accumulating one or more totals and transcribing at listing speed.

Printing is accomplished by means of wire print units for each printing position. Tiny wires, each capable of printing a dot, are arranged in blocks measuring five wires by seven. Letters, numerals, and other symbols are formed by various combinations of these dots. The wires required to print the dots are selected by electrical impulses and are driven against the paper with sufficient force to permit the making of up to seven carbon copies. The machine is capable of printing in reverse; this makes it possible to print both sides of a sheet in one operation, using carbon backing to print the reverse side.

The new machine has two tabulating card feeds. It can read 900 cards a minute through each feed, or a total of 1,800 a minute if the two feeds are used together. The machine can be connected to one or two auxiliary printers, to produce additional reports while it is creating its original records.

R. W. McLeod, manager of Burroughs' Special Machines Department, said, "The Series 'G' was developed for the growing number of companies whose volume of accounting and other records has increased to a point where it cannot be handled efficiently in any other way." The company considers the following to be applications in which the new printer will be particularly successful: dividend checks, premium and dividend notices, magazine subscription fulfillment and renewal notices, direct mail promotion, payroll disbursements and

KNOLL



Increased flexibility and integrated design are brought to contemporary offices by KNOLL OFFICE PLANNED FURNITURE.* Desk tops are interchangeable in varying colors and materials . . . drawer arrangements are adaptable to differing needs of personnel . . . a wide choice of woods and plastic finishes multiplies the effects that may be achieved with this versatile group.

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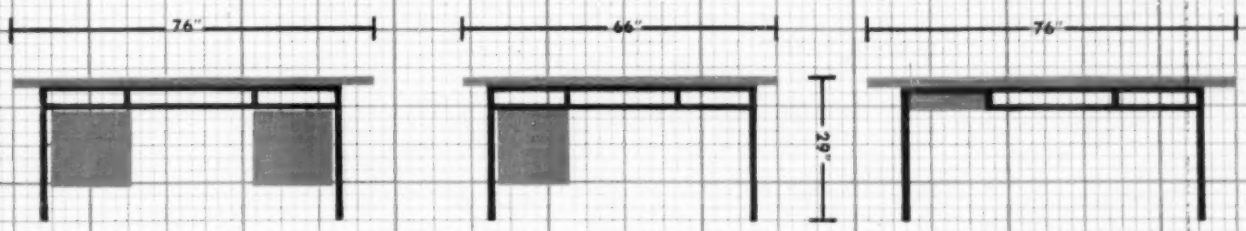

*PATENTS PENDING

related documents, public utility billing, production control documents, and state and municipal documents and records.

Also shown at the SPA exhibit was Burroughs' new Model E101 desk size, general purpose electronic digital computer. This new machine takes its input from a Burroughs' bookkeeping machine with an eleven-column keyboard, and prints results at a rate of 24 digits per second by means of a semi-gang page printer on rolls or forms up to eighteen inches in width.

The unit is equipped with a magnetic drum having a memory capacity of 100, and it is controlled by a set of eight removable pinboards; these boards hold pins through which programming instructions are given to the machine. A capacity of 128 program steps is provided.

Addition and subtraction is performed at a rate of twenty operations per second, multiplication and division at four operations per second. These figures include access times.

The computer is priced at $32,500, f.o.b. Detroit; it may be rented for $850 a month.

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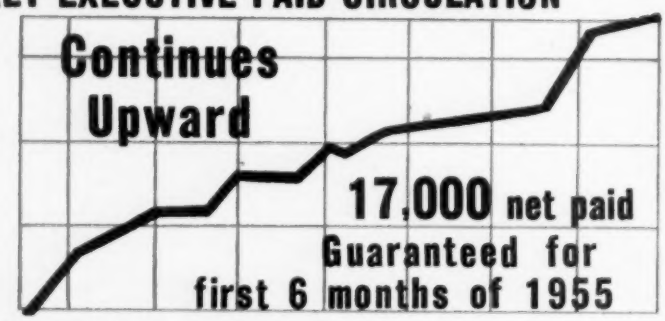

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1953

March	9,604
May	10,211*
June	10,506
September	11,027
December	12,185

and continuing into 1954 . . .

†March	13,005
†June	14,516
*September	15,553
*October	16,074

†As per June 1954 ABC Statement.

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The Magazine for Management Executives

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Benefit plan for bank employees announced

The Philadelphia National Bank has recently announced a new employee benefit plan which provides retirement pensions, widows' pensions, death and disability benefits for employees of the country's financial institutions. The plan will be known as The Philabank Plan.

The new program is the result of research and study by The Philadelphia National Bank, one of the country's oldest and largest banks, and the Mutual Life Insurance Co. of New York, oldest mutual life insurance company in America.

The Philabank Plan differs from standard employee benefit plans in that it combines the advantages of both trusteed and insured plans. According to the announcement recently made by Frederic A. Potts, president of the bank, the advantages of the plan include low-cost individual tailoring to the needs of large and small financial institutions, and application to both officers and employees.

Its basic features are: (1) lifetime monthly retirement income, (2) benefits in event of death, before or after retirement, (3) pensions for widows, orphans, or other beneficiaries of married male employees, and (4) temporary disability income benefits. It is especially designed, according to Mr. Potts, to provide financial institutions with a solution to the problem of competition for desirable employees. "Financial institutions," he said, "have found it increasingly difficult to attract responsible employees without offering a definite program of future benefits. Smaller institutions, particularly, have had a real problem. Their staffs have not been large enough to permit the creation of actuarially sound plans except at disproportionately heavy costs."

The lower costs and broader benefits claimed for the new plan have been made possible by the use of an electronic computer and by the fact that it is now possible to use the facilities of both institutions.

Envelope purchasing guide

A chart illustrating nearly fifty different types of envelopes has been prepared by the Envelope & Paper Corp., 121 Varick St., New York. The chart, designed to assist the user of envelopes in selecting products suitable to his needs, is available without charge.

*PROFIT-EATER (prof'it et'er) n. 1. Any inefficient, outmoded or overloaded records-keeping system that eats business dollars. Loves waste, especially of your money, motion, time and space. (Very greedy variety.)

How to put this profit-eater on a diet

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editorial

A. Devaney, Inc.

Who handles the problem child?

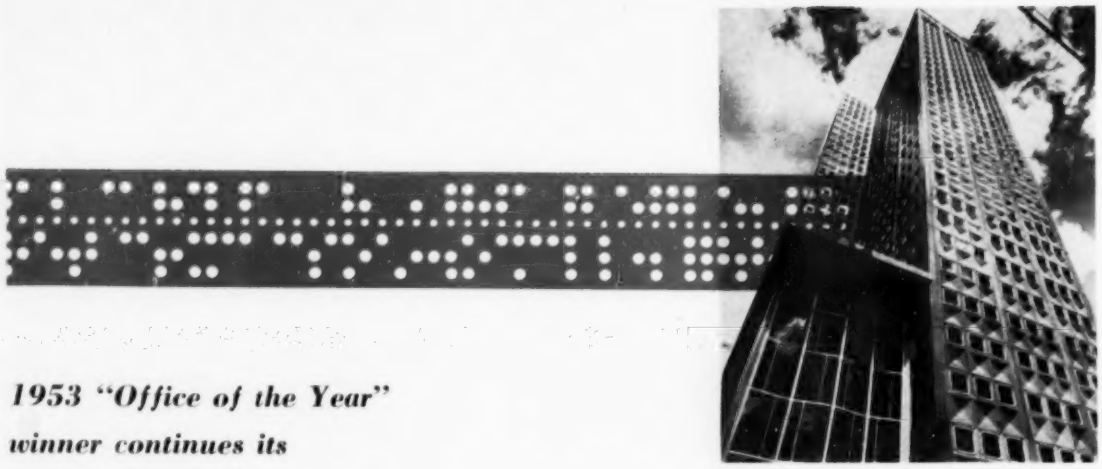
WHOSE should be the job of rebuking, instructing, and if possible, inspiring the office problem child—the newcomer who keeps getting into trouble of one sort or another, but who is regarded as still having the potentiality of a good worker?

The best personnel department in the world is not capable always of spotting in advance the girl or boy who may turn into an office nuisance. When trouble eventually develops, only rarely is it because of some major defect in the new employee. Few people deliberately make difficulties for themselves. Most new employees who get into predicaments have merely got off on the wrong foot.

The job was not explained clearly enough. The employee was not listening closely enough. There was not enough emphasis on the importance of what was to be done. In many offices, new people will make a bad start because they are not made to understand the part the work they do plays in the work of the office as a whole.

Errors made by new employees are not usually errors of great consequence, since new employees are not usually assigned at once to tasks where a mistake can do real harm. Why then risk impairing the value of a new employee by making a big fuss over minor matters?

Reproof and instruction often go down better and have better results when administered in friendly fashion by someone close to the offender in job rank than by someone really higher up!



1953 "Office of the Year" winner continues its leadership in 1954

ALCOA inaugurates integrated data processing on national scale

By Ralph W. Fairbanks

Fairbanks Associates. Management Consultants. Greenwich. Conn.

TODAY, at a time when many companies across the country are still debating the merits of integrated data processing, while waiting hopefully for more information, and newer equipment, a few leading concerns have long since passed the conversation stage and have already revised their procedures to gain certain stated objectives.

Such a company is Aluminum Company of America.

ALCOA, after a well-planned changeover of its entire sales order procedure, has accomplished these goals:

Orders taken in any ALCOA sales office anywhere in the country are received in Pittsburgh headquarters, assigned to a plant, and transmitted to that plant, all on the same day.

Most orders entered are completed on one page.

The system is adaptable to further extension of automation.

Time and work spent in sales offices in typing, checking, duplicating and mailing sales orders have been cut by 40 percent.

All re-typing and re-checking of information appearing on orders, through all subsequent stages of processing after initial writing, has been almost eliminated.

MR. FAIRBANKS, who has been a pioneer in the use of electronic and automatic control elements in office systems design, and who acts as technical consultant on office automation and systems for this magazine, toured the ALCOA installation in Pittsburgh last month in the latter capacity.

All this has been achieved with equipment and methods that were available in 1952 when the planning for the ALCOA conversion first began.

Basically, the ALCOA conversion is this:

Under the old procedure, a sales office in Los Angeles, say, would receive an order and enter it by typing duplicating masters for plants and mailing them to Pittsburgh, while producing copies for both Pittsburgh and sales office use. Orders were wired occasionally, but were subject to confirmation by mail. The material, when received in plants, had to go through varied processing there, involving additional re-typing and re-checking of the same material in Planning, Shipping and Invoicing.

The new procedure is this: When orders are received in the sales office, they are entered on a Flexowriter, which produces a punched paper tape coded to carry all the information typed. This tape is then used on a teletypewriter network to produce the same information almost instantaneously at a message center in Pittsburgh.

The incoming order at Pittsburgh, received by teletypewriter, is routed to Production Planning which allocates the order to a particular plant, if allocation has not already been made by the sales office. This information is entered on the order, which is then sent by teletypewriter to the plant concerned. This transmission by teletypewriter, of course, simultaneously creates all the copies of the order needed for use in the Pittsburgh office.

The incoming order at the plant concerned is received by teletypewriter, which prints a master for producing all copies of the order required for in-plant use, and simultaneously cuts still another tape capable of reproducing the completed order.

Although basically the new procedure for customer order service is just what its name implies—a streamlining of services that benefits the customer primarily, the company reaps benefits from it, too, besides the intangible but vital competitive advantage gained from any improvement in customer service. The new system gives company management faster information on orders placed which can be balanced against raw material requirements, inventories, plant work loads, shipment schedules, etc. And the system works two ways. Each morning, the Pittsburgh office receives a record by teletype of the previous day's shipment from each of its 24 works.

Moreover, the system gives the Pittsburgh office centralized control of its whole sales procedure. With nearly instantaneous transmission of the sales order from any field sales office to Pittsburgh headquarters, and the mechanical feasibility of instantaneous transmission from Pittsburgh to any plant, the possibility of laxness in clerical work standards is lessened. Transmission of information is almost instantaneous, and any delay in getting orders through automatically means human error or slackness. In such circumstances, clerical performance standards usually rise for fairly obvious reasons.

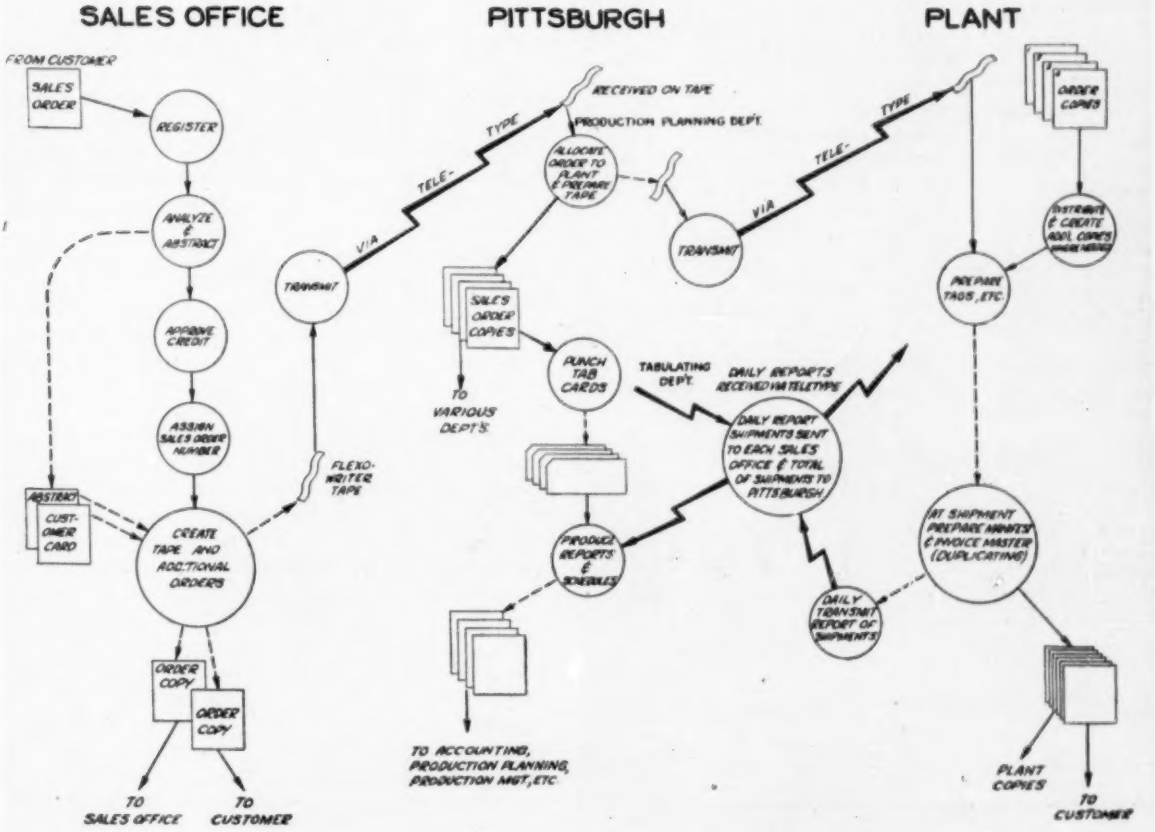
Then, too, the possibility of human error—as against any slackness in the work tempo—is lessened by the fact that information only has to be typed manually at one point, producing a tape and one copy which can than be proof read. If the tape is correct, all subsequent information activated by that tape will be correct.

Obviously, the heart of this system is the equipment capable of producing five channel punched paper tape, which can then be used to activate other equipment and carry the sequence forward. But for a company that has 60 different sales offices across the country, and 24 different works, and handles as many as 1,000 orders per day, a great many other modifications of procedures and forms had to be made.

Complete redesign of forms used in the sales order processing was essential on two counts: since the new system depended entirely on wire communication, every word that could be saved in completing a sales order represented a saving to the company in wire transmission costs, and, second, forms had to be so designed that exact registration was possible between the form being typed from tape at the receiving end, and the original form completed at the sending end.

By a rigid and critical scrutiny of all the information being entered in writing on the old sales order form, ALCOA's planning group was able to reduce the amount of writing needed to complete any order by 40 per cent.

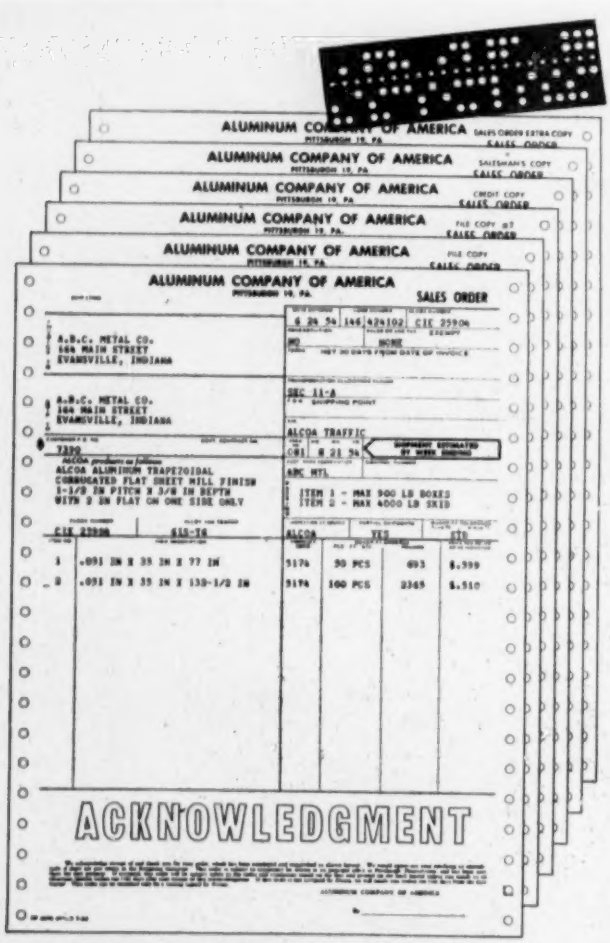
REVISED SALES ORDER PROCESSING AT ALCOA



Some material not deemed essential was eliminated; other data was coded and standardized.

All spacing on the original, Proof Copy Sales Order, and all copies subsequently produced on teletypewriters in the sales office, the Pittsburgh office Production Planning Division, and the plant had to correspond precisely. This was achieved by designing a basic Sales Order form which provides space for 72 one-tenth of an inch typing characters between the form's two margins. The Flexowriter on which the original sales order is first typed is set so that the first typing character falls adjacent to the red line denoting the left margin. A center vertical line on the form splits the 38th character space, while the 72nd character typed falls adjacent to the red line representing the right margin. A form at a receiving teletypewriter set in precisely the same way will have all information entered in the correct spaces.

Line coordination is equally scrupulous. Horizontal typing guide rules, indicating exact placement of the first line in multiple line entries, are provided on the proof copy, which is the original manually typed form in the sales office. Preparation of the order tape (following insertion of letter codes in the tape as a "leader" for teletypewriter operation) opens with the Proof Copy placed in the Flexowriter so that the first typing space appears at the extreme top left.



Order tape is fed to teletypewriter which, while transmitting order to Pittsburgh, produces set of six copies for Sales Office needs, including Customer's Acknowledgment.

A great deal of the information typed in the first original recording of the Sales Order can sometimes be entered from a tape. This occurs when the order comes from a regular ALCOA customer, so that a great deal of the necessary information on the sales form remains the same for each order. A tape is coded for this constant information, and used to operate the Flexowriter, with the human typist entering only that information peculiar to the individual order. Thus, even at this initial stage, time is saved and the possibility of any error is reduced.

The Flexowriter, even when operated by tape, is simultaneously, of course, cutting a second tape which carries both mechanically entered and manually entered information.

To follow a typical order all through the system, we might assume Company A, an old customer of ALCOA, orders a list of material through the New York sales office. The typist in New York is given the customer's order, Customer Card and Tape, and Sales Order Abstract. The Customer Tape, carrying all the constant information about the particular customer, is inserted in the reader of the Flexowriter. This Customer Tape enters all the constant information about the customer needed for the Sales Order, with the typist entering manually the variable information for the particular order.

The machine simultaneously creates a new tape carrying all the information being typed on the original sales order by both mechanical and manual means. This tape is then, after the Proof Copy Sales Order has been checked against the original order to insure that all information is correct, inserted in the sending teletypewriter, which simultaneously sends the coded information to a relay center in ALCOA's Pittsburgh headquarters, and makes all copies of the Sales Order needed by the local sales office. These copies are made on six-part Kant-Slip continuous forms, and include a salesman's copy, various file copies, and a customer's acknowledgment.

This completes the New York office's role in the processing of an order. The transmission tape created in the order writing process is destroyed in the local office the day after the order has been sent, and the permanent tape carrying constant information about the customer is returned to the files for storage until the next order comes in.

At ALCOA headquarters in Pittsburgh, the order originating in the local sales office is received in the relay center in the form of perforated paper tape. The relay center has direct wire connections with the Teletype Room of ALCOA's Production Planning Department, and the information received in the Relay Center is transmitted by the tape that has just been created there to a teletypewriter in Production Planning, which reproduces the order sent from New York in typed form on a four-part Sales Order form, and simultaneously creates another new tape. This tape produced in Production Planning is assigned a serial number, which is also stamped on the typed forms. The tape itself is placed in a pigeon hole file by number, while the typed forms go to the various departments which must take action based on them. One copy is held in the Teletype Room for quick checks on the number of orders

(*To page* 32)

Speakers at the afternoon session on computers on October 20

Most powerful management tool ever devised—

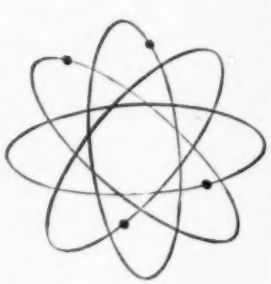
AMA conference concentrates on computers

ELECTRONIC computers will become the "most powerful management tool" ever developed, speakers at the opening day session of the American Management Association's annual office management conference, held in New York October 20-23, told more than 1,000 office executives representing organizations from all parts of the country.

In a program in which electronic applications to office work received primary emphasis, speakers representing companies which already are using computers or plan to install them shortly told the audience that computers, when applied to intelligently designed systems, can give management information never before available.

"With a computer, the accounting function which has been primarily historical, can supply more than a rear-view mirror; it can provide a clean windshield, and even some ability to see around the corner," W. W. Smith, senior procedures analyst, Major Appliance Division, General Electric, reported in the opening talk of the meeting.

General Electric, he said, has recently completed installation of the world's first business computer system at Appliance Park in Louisville, after a decision that its application to payroll operations, materials scheduling and control, order service and billing, and general and cost accounting, would justify the installation economically. This is not the



Because of the growing importance of the whole field of office automation, as demonstrated in the emphases of this conference and the SPA meeting (see page 24), *Office Management* will begin a new feature in the January issue—"Automation in the Office."

Edmund J. Conway, management services director, New Holland Machine Co. Division, The Sperry Corp., discussed "Reducing Costs Through Work-Simplification Training"

H. Bruce Palmer, president, The Mutual Benefit Life Insurance Co., spoke at the final luncheon session

limit of the system's applications, however, he pointed out; company officers believe the computer's greatest value will come through increased flexibility in meeting variations in consumer demand.

As an example of the latter use, Mr. Smith cited a study undertaken by General Electric designed to achieve automatic production of factory paperwork. Eventually, he said, the company believes its Univac computer will supply all the paperwork that production supervision needs to make a change in production schedules. It has already demonstrated that it can work out a hypothetical plan for assembly line balance and machine loading in less than two minutes—as compared with a time period of several days needed under the regulation planning system. Moreover, the plan produced by the computer proved to have lower labor requirements than the plan created by conventional methods.

His company anticipates the day when a "master plan," combining electronic sales forecasting, budgeting and production control, will enable GE to have the "right appliance at the right place, time, and price, at the lowest possible cost," he declared.

The second speaker at the opening morning session of the conference, Byron F. Burch, business procedures analyst, in describing the electronic payroll processing system used at Appliance Park, said that the computer and its auxiliary equipment are operated as a data processing center. General Electric is decentralized and each product department maintains its own payroll section, but these sections forward source documents on which payrolls are based to the center, where all computations are made.

Job tickets for hourly workers are prepared by foremen, according to Mr. Burch. Both individual job tickets and group production sheets are submitted daily to the individual department payroll section, which forwards them to the processing center after checking. At the center all data are keypunched, verified, balanced to controls, and then converted to magnetic tape. Univac then computes the pay, prepares the checks, makes necessary deductions, and prepares payroll records.

The first speaker at the afternoon session, A. C. Vanselow, Assistant Vice President in Charge of Planning, The Franklin Life Insurance Company, reported that his company expects cost savings following installation of a digital computer in the company's home office to compensate for the cost of the unit in four years or less.

The insurance company has spent more than $150,000 to date in training personnel, converting data and making other preparations for installation of electronic data processing. Following these initial, non-recurring, expenses, Franklin Life expects the operations of the electronic data processing department to cost approximately $150,000 a year, exclusive of programming costs. But installation of electronic data processing will permit a personnel saving of 200 employees, representing a salary saving of $425,000 a year.

First step in making ready for the changeover was to send selected company employees to familiarization courses given by Remington Rand, manufacturer of the Univac computer, Mr. Vanselow said. "It has been our general experience," he continued, "that it is much easier to teach our people to program than to teach outside programmers the life insurance business."

Following initial training, process analysis charts were prepared to present a complete picture of each operation in which the computer was to play a part. General flow charts were prepared for the operation of the master file and related functions. Programs were then defined and turned over to programmers, who created flow charts in the computer's terms, and coded the particular program for computer operation.

The speaker urged the audience not to wait for further developments of electronic data processing units before laying plans for the introduction of such units into their own operations. He recommended immediate conversion of all phases of the business justifying mechanization to punched cards as an intermediate step, and the selection of staff members to be trained in computer techniques.

"All large companies that do not enter into an electronic program in the very near future voluntarily will be forced into it when they are no longer able to meet the low cost of operation and prompt service provided by their competitors," the insurance executive warned. "Even smaller companies should study the possibilities of using medium sized computer service centers as they too may be unable to cope with the operating costs of larger companies using electronic data processing equipment."

The second speaker of the afternoon session on the opening day of the conference, E. F. Cooley, associate director, Methods Research, Prudential Insurance Company of America, sounded the first note of caution about the use of computers. Business must do a great deal of research before a computer can be definitely chosen as the best way of doing any particular job, he warned.

He recommended that any companies considering computer applications first develop a new procedure for a job already highly mechanized and operating at low cost. Only in this way, he pointed out, can any accurate estimate of the savings possible under the new system employing a computer be made.

Using his own company as an example, Mr. Cooley said that Prudential has decided to try a computer system for its billing and accounting operations after preliminary studies

had shown use of IBM's Tape Processing Machine would represent a substantial saving over present punched card methods.

The system Prudential plans will place a basic record of 3,000,000 insurance policies on magnetic tape. Approximately 200 reels of tape will be required, and these will be divided into four "due day groups," each containing data on policies with premiums falling due in a given seven-day period of the month. Within the reel, orders will be further broken down by agency and then by policy order number.

The company, however, does not plan to have its only record on magnetic tape, Mr. Cooley said. A historical record on each policy will also be kept in the home office.

The fully automatic office, which has all records in a form automatically accessible to the computer, does not seem to Prudential economically sound at this time, Mr. Cooley said. "We are not planning such a system," he continued. "We are going to build experience and confidence in the reliability of tape machines and systems before we plan to go all the way to a single tape record with automatic reference."

The last two speakers of the day were Daniel R. Mason, manager, Scientific Computing Service, International Business Machines Corp., and Arthur A. Katz, director, Electronic Computing Center, Remington Rand, Inc., who outlined the operation of computer service centers, where companies lacking electronic computers of their own can send problems for solution.

Both speakers emphasized the advantages for companies considering installation of data processing equipment in using computer center services first to determine if such equipment would really benefit them.

Mr. Mason echoed the feeling of Mr. Vanselow in stating that it is usually best to send company representatives familiar with the problems to be given the computer to a computer service school, where they can become familiar with computer and programming techniques before using the services of a computer center. The alternative technique is to prepare a precise statement of the problem, and submit it to the center, which will have its own technicians program it for the machine.

Computing service school courses are offered every other month by IBM for representatives of interested companies, Mr. Mason said. The courses are free and can be arranged through any IBM office. These courses prepare the company representative to program any problems directly for computer use, so that the total cost of solution resolves itself into standard hourly rates for the time the machine and operating personnel are at work on the problem.

Mr. Katz made the same point, "In our experience," he said, "it has proven much simpler to train methods men in the use of a new system rather than to adopt the alternative of training electronics men in the methods and procedures of any given company."

Analysis problems—involving information that must first be sorted and then summarized to provide indicative reports to management—have shown cost savings of six to one over conventional punched card systems, and have cut delivery time for reports from three months to three weeks, when handled through computer service centers, Mr. Katz reported.

The second day of the conference opened with a panel discussion on increasing clerical productivity. Panel participants, who agreed on the basic principle that the most important factor in increasing productivity is people, described what their respective companies are doing in this area.

Matt W. Boz, assistant manager, Methods and Statistics Department, Shell Oil Co., said his organization used an "integrated three-part view" in approaching the subject. Results achieved, he said, are shown by the fact that while Shell's sales paper work has increased 40 per cent in the last 5½ years, the number of clerical personnel involved in marketing activities has increased only 5½ per cent.

Key factor in Shell's system is emphasis on the individual and his part in the company's activities, Mr. Boz said, with particular accent on the supervisors in the various branch offices.

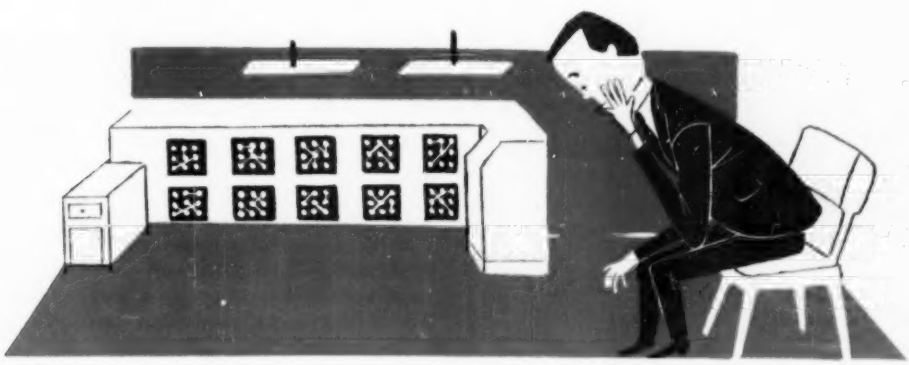
"A well-trained and properly informed supervisor, who also has sufficient delegated responsibility and authority, inevitably commands the respect and cooperation of his clerical staff," he went on. "In a climate such as this, the natural human desire to do a good job thrives."

The second panel speaker, William T. Hamilton, manager, Customers Accounting Department, Cleveland Electric Illuminating Company, said that work simplification and clerical work measurement are the basic tools that enable his company to meet a constantly growing work load at the lowest possible cost.

"Work simplification is not working harder or faster; it is simply working smarter," he said.

CEICO depends heavily on its employees for suggestions about improving their jobs, he said, and, as the other side of the coin, all employees are indoctrinated in work simplification techniques and principles.

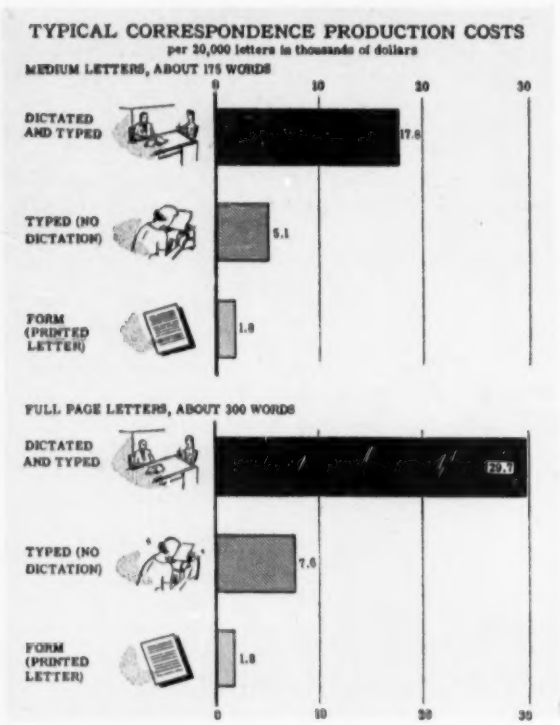
(*To page* 29)



Essentials of a good form letter program

FORM LETTERS, once shunned by most businesses because of their connotation of coldness and impersonality, are winning management interest again as correspondence costs continue to rise. The form letter, whether printed or mechanically typed, has many advantages: it is compact, concise and correct; if carefully planned—and time and effort can be put into a good form letter that are simply not possible with all individually dictated correspondence—it can create a better reaction in the recipient than a poorly written or brusque individual letter.

Naturally, the Federal Government, which sends out letters at the rate of 139 per second, four million per workday, places heavier dependence on form letters than the largest private concerns. And the government's General Service Administration has just produced a Records Management Handbook, "Form Letters," which, while composed primarily for the guidance of government administrators, still can serve as a useful procedure outline for private companies investigating the possibilities of savings and increased efficiency inherent in form letters.



One basic distinction between government use of form letters and the private concern's approach lies in the method of reproduction used. The government considers a form letter as basically a printed letter—many private companies would probably prefer even their form letters typed by mechanical means to resemble as closely as possible an individually dictated letter. But, that point aside, the program of form letter improvement outlined in "Form Letters" is equally applicable to commercial concerns and government bureaus.

The pamphlet recommends that any form letter improvement planning group first gather samples of form letters currently in use, and also, over a specified period of time, accumulate carbon copies of all outgoing typed letters as a basis for determining which individually dictated letters follow a similar enough pattern to make creation of a form letter practicable.

Individually dictated letters following a basic pattern are grouped together as form letter possibilities. The project has now accumulated all existing form letters, as well as letters that seem to be susceptible to form letter treatment.

The analysis phase of the improvement program now begins. According to "Form Letters":

"You must decide:

"1. The existing form letters that should be discontinued. This is determined by the number of times the form is used, and the suitability of the subject matter for a printed letter.

"2. The existing form letters that should be rewritten or redesigned. A letter needs rewriting if the language needs improving or simplifying. It should be redesigned if a new design would reduce the time required to prepare it for mailing.

"3. The form letter possibilities that should be developed into new form letters. This depends on the number of typed letters in the group, and on whether the subject matter is appropriate for a printed letter."

In its discussion of standards which should be used in determining whether a form letter is appropriate, the booklet makes the point that a form letter is only appropriate if it is about a routine, business or informational matter, while its economy can be gauged by the following scale:

A form letter is economical if:

Line count is:	Monthly usage is:
5	30 or more
10	20 or more
15	15 or more
20 or more	10 or more

Form letters, to be effective, must meet the common requisite of all good business letters, the booklet emphasizes—easy reading. Standards suggested emphasize short sentences, averaging not more than 21 words; short simple words; and as many personal references as possible.

Whenever possible, the plain form letter requiring no fill-ins is best, the booklet states, both because it requires less time to prepare for mailing, and because it looks more like an individually typed letter (again, this latter point would lose meaning in a business office that prepared all form letters by mechanical typing). It is often possible to eliminate fill-ins, and achieve a Plain Form Letter, by placing essential references, such as dates, amounts, and claim numbers, at the heading or the foot of the letter.

The booklet suggests printing of an inconspicuous dot 2½ inches from the top of the page and in vertical alignment with the left margin of the body of the letter to help the typist enter the address correctly at the top of the letter. The booklet also advises against partial printing (in printed form letters) of "Dear" on the salutation line, since this is said to make the typist's job of aligning the name with the "Dear" more difficult than it would be for her to type the entire salutation.

Whenever possible, it is wise, too, the booklet says, to have the complimentary close come five or more line spaces below the last line of the body of the letter, thus allowing space for insertion of an additional typed paragraph, if it is called for.

Form letters not only produce an initial saving in time and money, the booklet points out, but they can also produce substantial savings in the cost of filing carbon copies of the individually dictated letters they replace. This cost is estimated at $100 per thousand copies, and this can be cut radically if stringent controls are put on the filing of form letters. The booklet suggests that all file copies can be eliminated if:

The form letter is of a routine, informational nature, and a copy in files only serves to show that it has been dispatched.

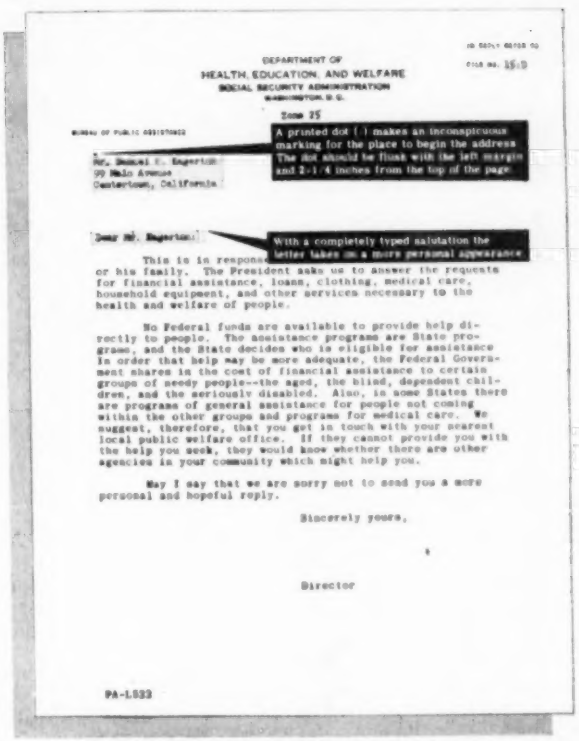
The form letter is a reply to an incoming letter which can be filed with a notation of the form letter number and the date it was sent.

The booklet also reviews the procedure for creating a standard system of numbering form letters, and offers suggestions mainly applicable to government offices, but adaptable to some private concerns.

A section dealing with standardization of form letters for field offices also has obvious applications for organizations which have many branch offices. If the organization has a decentralized control pattern, so that there is no one point ordinarily responsible for a continuing review of all form letters, it is suggested that periodic audits can be made of form letters on a program basis:

1. Form letters belonging to a particular program are collected from all field offices.

2. A central office representative of the program activity is asked to review the collection to make recommendations for standard letters in place of the local ones.


DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
SOCIAL SECURITY ADMINISTRATION

Zone 25

A printed dot ( ) makes an inconspicuous marking for the place to begin the address. The dot should be flush with the left margin and 2-1/4 inches from the top of the page.

With a completely typed salutation the letter takes on a more personal appearance.

This is in response
or his family. The President asks us to answer the requests
for financial assistance, loans, clothing, medical care,
household equipment, and other services necessary to the
health and welfare of people.

No Federal funds are available to provide help directly to people. The assistance programs are State programs, and the State decides who is eligible for assistance. In order that help may be more adequate, the Federal Government shares in the cost of financial assistance to certain groups of needy people--the aged, the blind, dependent children, and the seriously disabled. Also, in some States there are programs of general assistance for people not coming within the other groups and programs for medical care. We suggest, therefore, that you get in touch with your nearest local public welfare office. If they cannot provide you with the help you seek, they would know whether there are other agencies in your community which might help you.

May I say that we are sorry not to send you a more personal and hopeful reply.

Sincerely yours,

Director

PA-L533

"Plain form" letters, without fill-ins, are the best.

3. The standard letters are developed and distributed to all field offices, with instructions on their use.

Supervisors can play a vital role in searching out new opportunities to replace individually dictated letters with form letters if they will have extra carbon copies of all individually typed letters made for a given period once or twice each year, the booklet says. These copies can then be reviewed just as they were in the original form letter improvement project to find new groupings which might lend themselves to form letter treatment. Form letters themselves should also be reviewed periodically after the first improvement project to see how well they are working, and to make any improvements or corrections that seem necessary.

A well-directed use of form letters in government offices, can cut correspondence costs radically, the booklet declares. As an example, an office writing 250,000 letters a year is cited. This quantity of letters costs approximately $200,000 to dictate and type. Replacement of 25 per cent of these letters with form letters will lower the correspondence cost 22 per cent; replacement of 55 per cent of these letters with form letters will cut correspondence costs in half.

One hundred thirty-nine letters per second, four million per work day, are mailed from Federal government offices. With such a load, extensive use of form letters is almost mandatory. This article outlines some of the principles the General Services Administration has found valuable in planning its form letter program.

Office needs and the general contractor

A National Business Show Exhibit

THIS YEAR, the management of the National Business Show took an initial step in accordance with a new policy of broadening the base of the Show.

Heretofore, exhibits were principally confined to the machines and equipment that are needed in the modern office. This year it was assumed that office executives would be equally interested in the physical elements that help to provide the comfort demands in the modern office; and that his interest would be concerned not only with keeping up-to-date on the latest developments in lighting, floor covering, air conditioning and every other element that might contribute toward making his office meet present day standards, but also in the budget costs of such improvements. What better forum, therefore, to exhibit these new developments than at The National Business Show?

It was logical, therefore, that a general contractor should be included among those invited to participate in this expanded program policy. And it followed that a general contracting firm which has been serving business for 54 years in the field of office interiors, renovations and new buildings accepted this opportunity of cooperating in the Golden Jubilee Year of the National Business Show.

The following question was most frequently asked by visitors to this general contractor's exhibit:

"What does a general contractor do, and why does one need a general contractor?"

One way to explain the function of the general contractor is to assume a situation, say, a tenant change project (*see note*). In this hypothetical project, there may be involved the following various trades or contracts: 1—Demolition, 2—Masonry, 3—Electric Work, 4—Plumbing and Heating, 5—Sprinkler Work, 6—Air Conditioning and Ventilation, 7—Cabinet Work, 8—Floor Covering, 9—Painting, 10—Furniture, 11—Interior Decorating; and there might be several additional contracts involving such diverse specialties as kitchens, pnuematic tubes, escalators, etc. Of these enumerated elements, those involving construction represent on the average, about 60 per cent of the cost of the entire project.

Without a general contractor, it will be necessary for the architect, the engineer or the owner to secure separate bids (4 or 5) from each of the specialized contractors just enumerated. Each contractor, and there may be fifty or more, must be interviewed and screened, bids checked and contracts made with each successful bidder. Some one must see to it that all legal requirements and insurance responsibilities are met and maintained. Some one must schedule and coordinate the work of all the specialized contractors so that the work will proceed in an orderly, chronological and expeditious manner. Some general contractors regularly maintain, in their own organizations, crews of two or three building trades, such as masons, plasterers, carpenters, etc. In such cases and to that extent, the general contractor can handle projects involving these trades at a financial saving to the owner. Some one must keep the records of time and materials and authorize the progress payments of monies to the separate contractors. Some one must see to it that each contractor performs his work according to specifications or agreements as to materials and workmanship.

A general contractor can keep a project moving to completion because the sub-contractors look to him for orders and direction, single responsibility. This can be very important to the owner. Unnecessary delays, caused by confusion, divided authority, poor scheduling, or inefficient direction (and sometimes these unnecessary delays extend over several weeks), can be very costly to the owner. Suppose for example, the owner is paying rent in two locations while construction is in progress.

These, in part, are the functions of the general contractor. In him is placed the single and undivided responsibility. His experience and intimate knowledge of all phases of building and construction, his acquaintance with hundreds of sub-contractors, knowing which ones are better for what types of jobs, which ones keep promises and can be depended upon, his trained organization for supervision and purchasing, enable the general contractor to perform a valuable service for the architect, the engineer and the owner.

Note: The term "tenant change" is used to refer to the preparation, modernization, or rearrangement of any rented space whether the improvements are paid for by the landlord, the tenant, or shared.

A Merry Christmas
and
A Happy New Year

from
the entire staff of

OFFICE MANAGEMENT

Part 2—

How to determine switchboard requirements

by Roy Stone

Consulting Engineer on Telecommunications, Babylon, N. Y.

TO arrive at position (operator) requirement calls for a somewhat different approach. We are no longer interested in Holding Time; we must endeavor to establish the entire traffic load in all categories and types of calls in order to arrive at the total number of work units involved in the load, and equate it to the total work units available for each operator under various conditions. Sounds difficult and confusing, doesn't it? As in many other cases, the bark is worse than the bite. It is little wonder the average layman gives us in despair when such a statement is made. He wonders what it is all about. It is more important to know how to arrive at the required number of operating positions than it is for the requirement of trunk lines, because of the vast difference in cost. In measured areas auxiliary trunk lines cost only two or three dollars each. Multiple switchboard positions cost up to $45.00 each and the salary of each operator is $200 or more per month. When the above statement is "spelled out" it is quite simple to understand, and even more simple to make the study and arrive at intelligent results. Here it is:

On the facing page is a Table of Coefficients for Private Branch Exchange Switchboards. This schedule shows just about every type of call an operator has occasion to handle. The column on the right margin indicates the proper coefficient factor to be applied to each type of call. Many of these will never be used as they apply to hotel service and other special equipment arrangements. Let us review some of the items most frequently used.

1. This covers an interior call over a manual PBX (Extension to Extension) or extension to manual tie line. The coefficient is .90. Extension or Tie to Repeating Tie (Dial system) has a coefficient of 1.10 because it requires a certain amount of dialing operation according to the type of repeating tie line in use.

2. Incoming calls to Extension has a coefficient of 1.10. This is slightly higher than the extension to extension coefficient in the previous case because it is believed that the outside party on the Incoming trunk line usually speaks somewhat more slowly, and in some cases is hesitant in announcing his desires.

3. Outgoing call to Manual Central Office carries a coefficient of 1.60. There is some lost time on occasions waiting for the Central Office operator to answer. This coefficient applies in cases when the extension gives the number to the attendant, who in turn passes it to the outside operator. It will be noted that if the extension asks for an outside trunk, in which case he passes the number to the outside operator, the coefficient is reduced to .90. The PBX operator is not required to wait, she merely connects the extension to a trunk and proceeds to handle other traffic. Note also, that each of these items refers to other items in the Table in which an added coefficient must be taken into consideration. For example, this item refers to 8A in which the operator may be required to consult the Exchange Directory to determine the desired number, and for this work the coefficient of 4.00 is added. It also refers to 9 in which an allowance must be made when the extension "hangs up" and the PBX operator must call him back when she gets the desired party on the line, for which the coefficient of 3.70 must be added.

This is a good time to direct attention to the "secretarial" work many PBX operators are required to perform, such as looking up numbers, calling back extensions, and many other chores, all of which are detrimental to the service. If all of the reference items pertaining to this "secretarial" work were added to the original coefficient, it may require several minutes to complete each call, in which case the operator could handle no more than 20 or 25 calls per hour. In short, the more extra duties placed upon the PBX operators, the greater the operator and switchboard position requirement, and in many cases this will be found to be more expensive than it would be to employ secretarial personnel for the secretarial duties. The fact that in recent years it has been recognized that the duties of PBX operators should be confined to handling the traffic, and not to secretarial and clerical work, is another reason why many of these coefficients are never used. The salaries of operators are invariably greater than those of the average clerk, and often equal to those of secretaries.

4. Outgoing calls to a dial Central Office show a coefficient of 1.50 if only four digits are used to complete a number. The coefficient of .10 is added for each extra digit comprising the number in excess of four. In other words, the coefficient for dialing a 7-digit number would be 1.80.

A consultant on communications for more than 20 years, Mr. Stone is the author of *Cost Reductions in Wire Communications* (Christopher Publishing House, Boston). During World War II, Mr. Stone served as Communications Officer on the War Department General Staff. His most recent projects include acting as consultant on telephone requirements for General Foods Corporation's "Office of the Year" in White Plains. The first part of this article appeared in the Sept., 1954 issue.

5. An AB toll call is one in which the outside operator passes the call directly to another outside operator at the distant point, thereby minimizing the delay, such as to a suburban area.

6. The long distance call requires the greatest amount of time as compared with any other type of traffic. 6D is the category usually applied to these calls and it carries a coefficient of 10.00. Note that in either the AB toll or the long distance call extra allowance is made for obtaining time and charges, ticket work and other items.

To proceed with the traffic study, let us establish a hypothetical traffic load for the purpose of arriving at the number of positions and operators required to handle it. In order to make such a study at a switchboard serving a manual installation, a separate girl would be required to peg count the various categories of calls as the operator completes them, if all categories were counted at the same time. It is rarely possible to do this because of the relatively small number of workers that could make an intelligent tabulation. Personnel other than PBX operators must be given special training for such purposes. In the light of this requirement, the PBX operators can make the study by using the Veeder counters recommended for use in determining trunk requirements, the only difference being that the study will require a longer time to complete because only two classifications of calls can be studied at the same time. For the first two days the two Veeder counters at each position could tab the Extension to Extension (Item 1) and the Incoming to Extension (Item 2) traffic. The next two days Items 3 and 4 can be tabulated. The final two days Items 5 and 6 can be tabulated. Making the study in the designated categories on three different occasions will not alter the final results materially. Experience has shown that the differential is less than 2 per cent.

Item 7 covering assistance calls can be tabulated separately as this traffic is usually the least of any handled. It comprises, for the most part, the transfer of calls from one extension to another. (*To page* 68)

TABLE OF COEFFICIENTS—PRIVATE BRANCH EXCHANGE SWITCHBOARDS

Class of Calls	Refer Also to	Co-efficient
1. Extension to Extension—Extension or Tie Line to Manual Tie Line	8B to 12	.90
Extension or Tie to Repeating Tie	8B to 12	1.10
2. Incoming to Extension (Note A)	8B, 10 to 11	1.10-1.15
3. Outgoing to Manual Central Office		
A. Local Call Passed by Attendant	8A, 9 to 13	1.60
B. Local Call Passed by Extension (Attendant Connects Trunk)	12, 13	.90
4. Outgoing to Dial Office		
A. Local Call Dialed by Attendant (4 Pulls)	8A, 9 to 13	1.50
Allowance for Each Additional Pull		.10
B. Local Call Dialed by Extension (Attendant Connects Trunk)	12, 13	.90
5. AB Toll Call (Attendant Passes or Dial)	8A, 9 to 11, 13	2.50
Allowance for Receiving Time and Charges		2.00
6. Long Distance		
A. Toll Terminal Method—Extension Passes	12, 13	.90
B. Direct Recording Trunks—Extension Passes	12, 13	2.55
C. Via Manual or Dial Central Office to Long Distance Recorder—Extension Passes	12, 13	3.00
D. Attendant Records and Passes Call to Long Distance Recorder	11, 13	10.00
Allowance for Receiving Time and Charges		3.00
Allowance for Checking Calling Party's Name against Room Number over Tie Line Trunk		4.00
7. Assistance Calls—Note E		
A. Attempts to Complete	8A, 12, 13	3.00
B. No Attempts to Complete		1.50
8. Allowance for Directory Work		
A. Reference to Exchange Directory (add to Items 3, 4 and 5)		4.00
B. Reference to P.B.X. Directory (add to Items 1 and 2) Note B		1.30

Class of Calls	Co-efficient
9. Allowance for Extension "Hang Up" (add to Items 1, 3 and 5)	3.70
10. Allowance for Taking and Delivering Messages (add to Items 1 to 5) Note C	5.00
11. Allowance for Announcing Calling Party to Called Station (add to Items 1 to 6) Note D	2.50
12. Allowance for Ticket Work (add to Items 1 to 4, 6A, 6B, 6C, 7A)	.60
13. Reduction of Individual Busy Signals and Idle Trunk Indicating (deduct from Items 1 to 7A)	.10

Modification for Multiple Line of Trunk Lamp Arrangement

All Types of Switchboard	Weighted Coefficients to be Multiplied by
14. Jacks and Lamps Multiplied Once (2 Appearances)	.94
15. Jacks and Lamps Multiplied Twice (3 Appearances)	.91
16. Jacks and Lamps Multiplied Three Times (4 Appearances)	.89

Notes:

(A) For Incoming Calls to Extension at Hotel, Department Store and similar boards a coefficient of 1.65 should be used.

(B) Whenever calls are referred to a centralized P.B.X. directory bureau over tie lines or trunks a coefficient of 5.0 should be used.

(C) A coefficient of 10.0 should be used for taking and delivering messages at Hotel P.B.X.'s.

(D) Both items 9 and 11 should not apply to the same call.

(E) Item 7 includes intercepted calls, preliminary pulse calls attempts to complete busy and don't answer calls, conference calls, and calls for miscellaneous information for which coefficients are not otherwise provided.

(F) In using this table of coefficients, the following basic busy hour engineering loads should be used:

12 or more attendants in team,	245 units.
5 to 11 attendants in team,	230 units.
4 attendants in team,	225 units.
3 attendants in team,	220 units.
2 attendants in team,	200 units.
1 attendant,	150 units.

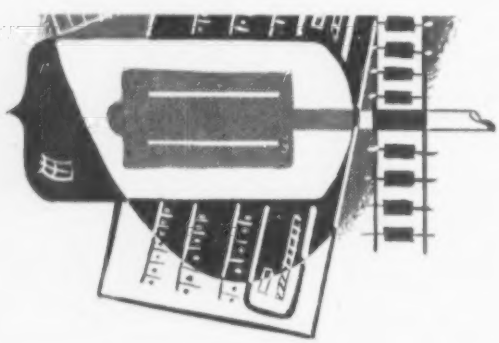
Members of the Wednesday morning panel. From left to right, Kenneth A. Wulff, E. G. Benser, Chairman Matt W. Boz, Dr. Howard Aiken, and Col. G. C. McDowell, USAF

Electronics dominates SPA conference

THE ELECTRONIC AGE is coming by a process of evolution, not through violent revolution, according to most of the speakers at the three-day convention of the Systems and Procedures Association of America, held in New York's Hotel Commodore from October 25th through 27th.

The new wonder machines of which there has been so much talk, they said, will not replace people. Instead, they will help to relieve workers of drudgery and will free them to perform creative work on a higher level. In the end they will create jobs, just as technological advances of the past have always produced new needs, new businesses, and new jobs.

But these changes, they agree, will come about slowly, allowing time for people to adjust to them, and because human beings will remain a vital force in business, management will continue to be faced with the need for sound human relations policies. "Change is inevitable and so are the resulting employment adjustments at the growing edge. Equally important, however, is the corollary that the adjustment has always been successfully accomplished." These remarks were made by Devereux C. Josephs, chairman of the board of the New York Life Insurance Co., in the course of his address during the session on October 27th.



Mr. Josephs' speech was in many respects a summary of the entire conference. In it he concerned himself with the general picture as business looks into the electronic age. Said he, "When articles on our new machines are published in lay magazines and in the Sunday supplements, there begins to be a good deal of loose talk and careless thinking about what these new machines can do, and what they may do to people and their jobs. For example, the announcement of this conference speaks of 'the vanishing office.' Of course, you and I know that this expression is our own code word for only a certain phase of office work. But the layman, who does not understand what is going forward, might wonder whether clerical work will be abolished entirely."

Mr. Josephs then quoted several excerpts from publications that have appeared since the war which seemed to promise that automation would produce large-scale unemployment, economic distress, and "an impoverishment of the quality of human life" which would rob it "of opportunities for individual creation, for pride of workmanship, and for sensitive qualitative discrimination."

To these critics, the speaker answered, "I cannot subscribe to either of these two rather extreme points of view, no matter how many examples are set forth in regard to the limitless possibilities of our new machines and the dislocations which they will bring—as though disorder were inevitable. Only *change* is inevitable. Disorder need not accompany it.

"Man is an adjustable animal provided he is given time. Always there is the fear that we will be too rigid to meet the new, the untried, and the unknown. You have seen within your own experience how baseless is this fear."

Registrants examine latest office equipment at booths of exhibitors

Mr. Josephs listed six main ideas which he considered important both to management and to those who actually operate a machine or system:

"(1) Top management must work hard to create an atmosphere of receptivity to change. It is important to make change, or, more accurately, the consideration of change, fashionable.

"(2) The attitudes of top management are most important. Indeed, they are controlling. Think of new machines, systems, and techniques not as the reduction of the number of employees, but as the opportunity to release hitherto unused talents for work at a higher level. Think of the stimulation which will come from upgrading jobs above mass routine operations. Top management must encourage innovations by giving recognition down the line to all who are alert to suggest them. Effective changes are not made by executive edict.

"(3) A procedures department should be established and given an open-minded hearing by the old-timers who have had responsibility over the years for routine operations; and, equally important, the views of the old-timers must be invited and thoughtfully considered.

"(4) A procedures department is an *aid*. It definitely is not a substitute for thinking by heads of operating departments who have the ultimate responsibility for doing a more efficient job.

Rear Admiral R. H. Hillenkoetter, USN, opens the Navy's paperwork management exhibit, as SPA President Charles C. Chase looks on

Devereux C. Josephs and Charles C. Chase

Scene in the grand ballroom during the opening session

"(5) Timing is an important consideration in making changes. A program must be planned in advance, starting at a propitious moment with plenty of time provided for thorough development and staff preparation.

"(6) Personnel specialists and tested techniques are important in personnel practice, but each manager, superintendent, and supervisor must be equally alert to the part which he must play. Effective dealing with people is an indispensable part of the job of everyone in management. Remember above all: machinery and people are not interchangeable."

The conference consisted of two main parts. The main lecture series was given in the grand ballroom of the Hotel Commodore, while a series of small groups met simultaneously in seminar discussions on various specialized subjects.

To begin the conference on October 25th, Charles C. Chase, an executive of the Harshaw Chemical Co., of Cleveland, and president of the Systems and Procedures Association, welcomed the conferees and introduced the keynote speaker, Herbert O. Brayer, associate editor of *American Business*.

Mr. Brayer set out to expound on the thesis that Mr. Josephs was later to summarize on the final day of the conference: in spite of the excitement and glamour treatment given the new electronic brains by the press, business must approach the electronic age cautiously, "with both feet on the ground." Progress, he said, is after all not new in the office. In spite of unfavorable comparisons which are sometimes made between progress in streamlining the factory and in modernizing the office, Mr. Brayer said, progress in the office has been as marked in its own way as it has been in the factory. Office procedures, he pointed out, cannot be streamlined in the same way one might streamline the production of nuts and bolts. There has been a great deal of emphasis on production in the past. Management has been concerned with this. It has been forgotten, he added, that increased effectiveness in the factory and in the sales force is a reflection of increased effectiveness in the office.

The speaker continued by observing that management had become so preoccupied with automation in the factory that it had neglected the office, often forcing office personnel to operate with obsolete equipment. It has been a notable

(*To page* 34)

Conferees attending one of the thirteen seminars held concurrently with the main lecture series

Middle management is the key

by Carolyn N. Nelson

Assistant Secretary, Mutual Trust Life Insurance Company
(Based on a speech given before the Office Management Association of Chicago)

WHAT IS middle management? It is that group of individuals who have both executive and administrative responsibilities, and supervisory duties as well. These people are department and division managers or their assistants; office managers; executive assistants; junior officers. The important thing is not what their titles happen to be, but rather, the nature of their responsibilities—their functions in the organization.

Why do we say that middle management is the key? The key to what? This group of men and women is actually the center of all operations—the ones to whom top management looks for performance, the ones to whom subordinates look for direction. Middle management is the key to two main doors: the door to greater profits through more efficient work; the door to progress through careful planning. These two keys can fit the door that leads to the president's office.

In order that the key will open the doors, middle management must please everyone—from the beginning typist to the chief executive. This is a tough assignment. It requires many capabilities. For we all know how difficult it can be to satisfy top management, and at the same time keep things running smoothly among our subordinates. Yet, it is impossible to accomplish one without the other.

Let us consider Mr. Parker as a representative example of successful middle management. He is a junior officer of his company, and he heads a division of 30 office people. In his job, he is the liaison man between top management and clerical employees. His activities are many and varied. He is a specialist in much that he does. Whether he is dealing with his superiors or his subordinates, he is an expert in three fields:

First, he is a human relations expert. The most important thing is people—employees are a company's greatest asset. Mr. Parker knows that good personal relationships are essential, regardless of what he is doing. He knows that morale, like the weather, can be good or bad, but it is always with us. So he concerns himself with maintaining the highest possible *esprit de corps* in all dealings with his associates. He realizes this is more than just being nice. He knows that successful human relations depend upon all of the factors: people, ideas, interests, materials, and obligations.

He is loyal to his superiors; and he is loyal to his subordinates. Yet, he cannot afford to be two-faced. Sometimes this is next to impossible, but Mr. Parker does play fair. He avoids office politics; he avoids office gossip.

Then too, Mr. Parker is a salesman. His product is himself. He is "selling" himself to top management as he performs his duties and carries out his responsibilities. He is "selling" his ideas to his superiors. He is "selling" his leadership ability to his people. In addition, he is "selling" management's ideas to those in his division. And, he is "selling" his employees on the importance of their particular jobs to the over-all success of the company.

Third, he is a public relations expert. In the eyes and minds of his division, Mr. Parker is the president; in fact, he is the company. Therefore, he is educating his employees, telling them about the company and its products. He is interpreting company policy and philosophy so that they, too, feel essential.

Outside of his work—in civic affairs, trade associations, community projects—his company affiliation is known. He represents the organization in everything he does. Others form an impression of the company by his actions and comments. Mr. Parker realizes the significance of his public relations responsibility.

Now let us analyze Mr. Parker's work in terms of the

two keys: profits and progress. Many times it is difficult to separate these functions, but there are certain aspects of his work that fit into one or the other of the two.

First, profits. In this phase of his job, Mr. Parker is the means by which orders, directives, and policies are personalized. He is most concerned with performance. His primary objective is to lead his group to do their best work, in the most efficient manner.

He is a training director, when any new procedure is introduced in the division. Also, "on-the-spot" training is constantly necessary in order to keep the work on schedule. For example, when both the voucher typist and her regular substitute are absent, the work must still be done. So perhaps one of the stenographers is quickly put to the task, and he explains the routine, showing how vouchers are prepared. Mr. Parker does this type of training frequently, just as some of you may have experienced the same thing.

Incidentally, he may be called upon to be a machine repairman, if a piece of equipment gets temperamental at a crucial moment.

In addition, he is sometimes a letter-writer, a mathematician, a bookkeeper, a posting clerk, a file clerk, and every once in a while, he is a typist.

Mr. Parker is often a personnel director. He knows the company's personnel policies. He knows how to answer his employees' many questions involving these rules. It can be very embarrassing when an employee asks you how many days' vacation she has after 7¼ months on the job. You tell her a week, and then later you discover that she would only have 3½ days with salary. So you talk with her again, admit as tactfully as possible that you were wrong in the beginning, but assure her that she can have the other day and a half on her own time. Perhaps all of you can remember similar situations when it was difficult to "save face," and neither you nor the employee were very happy.

Mr. Parker is many times a father confessor, as he listens to personal problems and suggests possible solution. These problems may seem small and insignificant to him, but they are nonetheless very important to the individual asking for help.

He serves, too, as chairman of an operating committee . . .

One of his responsibilities as a junior officer is planning for progress, both for the company and for himself. During these busy days, we are so concerned with getting a job done that there seems to be little time left to look ahead to plan more efficient operations; to help develop new company policies; to see where we are going. However, Mr. Parker is an example of successful middle management, and he does find time, or perhaps he makes time, to think about the future.

Thus, he is a methods analyst or systems expert as he works on new procedures to suggest to his superiors. He knows the most up-to-date mechanical devices that can be used in his new system; so he is also a business machines expert.

Working on ways to increase efficiency, without increasing costs, gives Mr. Parker the added talent of a cost accountant. He knows the approximate cost of his division's operations. He is anxious to devise means of economizing without sacrificing quality.

Keeping management informed is his responsibility. Thus he is a reporter, or recorder. He knows the president wants reports in the form of graphs and charts. But his immediate superior prefers narrative style memoranda. He prepares his material accordingly. Mr. Parker knows the importance of improving operations and organizational relationships. If he does not have the authority to deal with certain situations himself, he goes to his superiors with suggestions or requests. He is a communications expert, because he knows how best to present his ideas—some may be in written form, other times he may discuss them in conferences.

Mr. Parker serves as chairman of an operating committee. He is a good chairman and leads successful, short meetings. He attends other meetings to discuss inter-departmental procedures, administrative problems, or company policies.

Personal progress means that Mr. Parker must be a talent scout. He is developing subordinates, so that when he is considered for a promotion, top management knows someone is there to fill his shoes. This means, too, that he is constantly on the look-out for capable people, both in his division, and elsewhere. Disraeli said, "The secret of success in life is for a man to be ready for his opportunity when it comes." Mr. Parker is ready.

Don't you agree that Mr. Parker is an extremely busy man? From a machine repairman to a committee chairman—within the space of an hour or perhaps even less time covers most of the phases of business procedure. Mr. Parker goes from one job to another—or he may be performing several at the same time—with varying demands on his talents. He possesses flexibility, without which success is questionable.

You may think Mr. Parker is Mr. Superman, because you think no human being could possibly do so many things, and do them well; but many Mr. Parkers do exist in our companies. They are opening the doors to greater profits; they do have the key to business and personal progress.

The Mr. Parkers of today are the presidents of tomorrow.

AMA conference

(*From page* 17)

"Results," Mr. Hamilton said, "indicate that work simplification is definitely becoming a way of life for us. More of our people are cost conscious and are looking for ways to provide better service cheaper."

Work measurement is a logical sequel to work simplification, Mr. Hamilton said, since it is a reliable indication of how much improvement has been accomplished by work simplification. His company again depends heavily on employee and supervisory participation for the success of its measurement program: time standards for various operations are developed from precalculated data by specialists, who then train selected employees in the use of these data. From that point on supervisors and workers actually do the work measurement job.

Productivity improvements have made it possible for the Farm Bureau Insurance Companies to operate with a decreasing salary per policy in force while at the same time increasing average salary per employee, Elmer A. Rule, vice-president and secretary of the Companies, said in the third presentation on the panel.

"We are spending considerable time in working on various possible incentive programs," the speaker declared. "We want to increase the amount of pay to employees on the basis of their contribution to the company's welfare. At the same time we desire to minimize the amount of pay based solely on length of service. We emphasize cash for work and idea productivity, and security and fringe benefits for length of service."

Another technique used in increasing productivity, the speaker said, has been division of the company into 14 regional units, in each of which management and clerical workers' pay progress is measured by the efficiency and economy with which the unit gets its work done in comparison with other regional units.

Recent morale surveys have shown that morale is higher among the decentralized units, than it is at the main office, Mr. Rule declared.

Primary emphasis throughout is put on people, even at the expense of methods. "A good procedure that is not understood by a clerk may be less economical than a poorer procedure that is understood and accepted by the clerk who will use it," he said.

The final panel speaker told the conference audience that the possibilities of electronic mechanization are "beyond any question the most dramatic development in office procedures in many years," and that office executives have never had such an opportunity to increase clerical productivity.

James R. Wilson, management engineer, Engineering Service Division, E. I. du Pont de Nemours and Co., said that du Pont's experience with integrated data processing by means of five-channel punched tape sent over a leased wire teletype network has enabled the company to have a complete sales and inventory picture for all sales in every sales office across the country in report form at the Wilmington headquarters by 8 a.m. the next morning.

Some problems have been created through the application of electronics, Mr. Wilson conceded: personnel need additional training; integrated data processing is apt to cut across department lines, and organizational groups may have to be changed as a result; a procedure once designed as an integrated application must be tightly controlled, so that necessary changes can only be made at a high level.

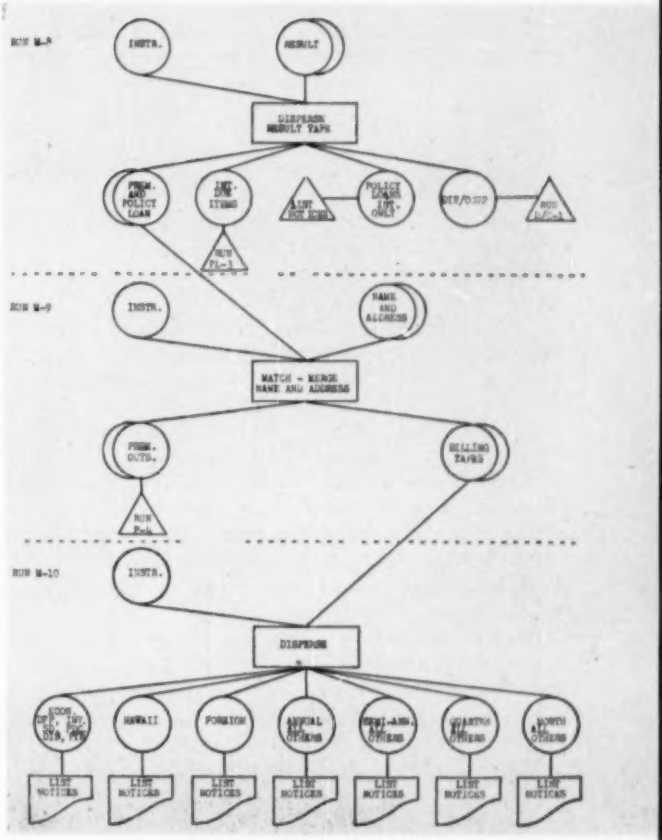


Chart used at conference illustrating Master File Run Premium Billing Procedure, Franklin Life Insurance Co.

United States Rubber Co. cut expenses more than 32 per cent through a four-year cost reduction program, H. M. Kaiser, office manager of the Tire Division, reported in the first talk of the afternoon session on the 21st.

Dollar savings amounted to $1,962,682 a year, and it was possible to reduce staff from 2,299 to 1,438, he said.

Describing the evolution of the cost reduction program, he said that the first large reductions came through improvement in management and supervision. Methods improvement followed: order entry and billing operations were put on electric tabulating machines; timekeeping, extension, rating and percentage calculations, finished goods inventory dollar records, and a variety of accounting distributions were also applied to tabulating equipment.

His company is now considering possible application of electronic data processing equipment to accounting functions, raw material planning, scheduling, and finished goods control, Mr. Kaiser said.

Work simplification procedures were emphasized again by the second speaker of the afternoon session, Edmund J. Conway, management services director, New Holland Machine Company Division, The Sperry Corporation.

Sperry, too, trains its workers and supervisors in work simplification techniques, and has found that their suggestions have made a major contribution to the company. Some of the ideas offered by participants in the Sperry work simplification courses are:

Handwriting many internal reports rather than typing them.

Eliminating acknowledgments of orders for spare parts, since these orders are filled within 24 hours.

Classifying material before entering it in central files, thus reducing the number of pieces microfilmed.

Using test checks on expense reports and vendors' invoices, rather than a 100 per cent check.

Efforts to make supervisors more cost-conscious are not going to succeed unless their superiors make it clear at all times that they are concerned about costs and expect the supervisors to keep them down, Dr. Floyd C. Mann, assistant program director, Survey Research Center, University of Michigan, said in the last talk of the day.

A second vital factor in the degree of importance supervisors give to cost reduction is the degree to which responsibility for costs is delegated to them, he continued. Supervisors who are given a high degree of latitude in deciding how to spend the money budgeted to them are the ones most concerned with keeping costs down.

Research studies at the center also showed that the supervisors who are most aware of costs are also most alert to the absence and production records of employees under them. This does not indicate that such supervisors are "slave drivers," however, Dr. Mann reported.

The studies suggest some reallocation of budget decision powers, the speaker continued.

The third and final day of the conference opened with assurances by J. Douglas Elliott, superintendent, Customers Billing Department, Detroit Edison Company, that the completely automatic office composed entirely "of sexless and shapeless machinery" will never materialize.

There will always be people in offices, and those people will be even more important in the future than they are now because electronic office machines are more dependent on people to tell them what to do than standard machines, he told the conference audience.

"Electronic machines must be led, figuratively speaking, by the hand, and told every move to make," he declared. "Fortunately, though, they need be told only once."

The speaker also contradicted what he termed three other basic misconceptions: That highly specialized technicians will be needed to operate the machines, that workers will lose their feelings of individuality because their jobs will be reduced to dull, repetitive work, and that large reductions in personnel will follow installation of electronic equipment.

There will be some displacement of workers, he declared, primarily in the less skilled office categories, but it will be considerably less than most office executives anticipate. There will, however, be a considerable amount of shifting of jobs within the organization as procedures are changed to prepare the concern for electronic equipment.

The second speaker at the final morning session pointed out that the office must perform its work in a way that will reinforce the sales effort: it should build every procedure so that the best kind of service is rendered to the trade, merchandise is delivered as required, and every contact of customer with office builds good customer relations.

The speaker, I. J. Berni, manager, District Office Service Department, the Procter and Gamble Company, also said the office should make every effort to relieve sales personnel of as much paper work as possible, and is responsible too for seeing that sales has all the information needed—at the time needed—to do its selling job efficiently.

In order to achieve these objectives, Procter and Gamble makes use of "control by the rule of the exception," Mr. Berni reported. Thus, every clerk in customer service reports at the end of each day work uncompleted that day.

This procedure serves a triple purpose, according to Mr. Berni—it stimulates the clerks to get all work completed each day; it enables management to channel in additional clerical help if a bottleneck is developing; and it prepares sales to answer complaints if work is delayed.

The last speaker before the concluding luncheon at the conference, Malcom F. Hood, assistant secretary, Connecticut General Life Insurance Company, said that he and his company believed any new office building should embody features which make it outstanding as a drawing card for quality employees. Connecticut General will do this in its projected new suburban office building by making its dining facilities "outstanding in every sense." The dining area will be a building separate from the main office building, cantilevered out over a reflecting pool. Glassed-in on three sides, it will seat more than 800, and will provide both cafeteria and table service.

Connecticut General believes it has also planned its building to operate efficiently in 1956, when it will first be occupied, while still providing for eight-to-ten years of built-in expansion space. This was achieved by using two independently-conducted studies, one of which projected space needs as all executive officers saw them for various future dates, and the other of which studied and projected sales volumes; assets growth, personnel increases, premium income, etc.

The final luncheon session of the two-and-a-half-day conference had H. Bruce Palmer, President, the Mutual Benefit Life Insurance Company, as speaker. Stressing the primary importance of human relations in any business, governmental or community undertaking, he warned management executives not to "withdraw their egos" from human problems, and said that stimulation of the creative activity of human beings is the real test of leadership.

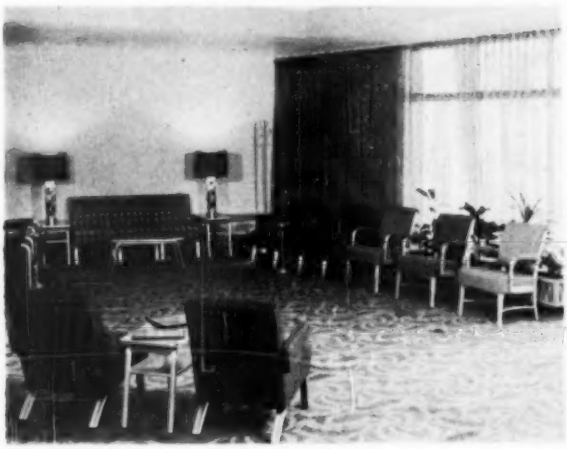
Company presidents are, in the last analysis, employees themselves, and should regard every other employee's problems as their own, he said, in criticizing the traditional distinction between "management" and "employees."

"Everyone in the organization has some management responsibility," he continued. "Actually, the two groups are one and the same thing and there is no reason for them to have conflicting goals."

He recommended that every company president make it a point to become familiar with every department and every individual in his organization. "Employees," he said, "want everyone in the company to be approachable. They want skillful guidance from their supervisors, and from management they want fairness, helpfulness, friendliness, sympathy, generosity, and enthusiasm for clearly defined common goals. To channel the potential enthusiasm, ability, and inspiration of people toward the company's objectives is business' challenge."

News pictorial

The pictures on this page show the new office building recently opened by The General Fireproofing Co. at its plant site in Youngstown, Ohio.



In a building made cheerful by the use of bright pastel colors and fluorescent illumination, General Fireproofing has used its own furniture.

Shown at the top is the office of the president, where the manila tan finish of the desk contrasts with the redwood paneling of the wall and the green of the carpet. At the left, above, is the reception lobby, decorated with walls of light green and flame and with a carpet of red and green. Immediately above is a view of the building's exterior; the entrance has a flagstone patio under an anguiar canopy and the sidewalk is provided with radiant heating pipes to melt away the winter's snow. At the left are the general sales office, decorated in dark green, light yellow, flame, and beige, and the meeting room. The building was designed by Kling & Frost, Youngstown architects. The general contractor was Joseph Bucheit & Sons.

ALCOA—

(*From page* 14)

coming through from any given sales office, the others (if no plant allocation for the order has already been made by the local sales office) are sent to the Product Planner. The Product Planner allots the order to a particular plant, and designation of the plant selected is made on the "Ship From" block of the Sales Order form. One copy of the order is kept by the Product Planner, and the remaining two forms of the original set, now carrying the name of the plant designated to fill the order, are sent on to the Tabulating Department of the Production Planning Division, and to the Teletypewriter room, respectively. This enables Tabulating to prepare punched card records for incoming orders almost as soon as they are received, and thus prepare analyses and reports much faster than was possible under the old system.

The Teletype Copy returned to the Teletype Room is used to identify the tape from which it was made by serial number, and the tape is then held with other orders allocated to the particular plant, until the plants notify Pittsburgh that the proper forms have been placed in their receiving teletypewriters, and they are ready to accept orders. At that point, the process originally carried through between sales office and headquarters is repeated: the coded tape in the teletype room in Pittsburgh transmits all the information on the Sales Order to the receiving teletypewriter at the designated ALCOA plant. The "Ship From" information, added manually to the Pittsburgh copies of the sales order by the Product Planner, is added at the transmission point in Pittsburgh by a separate and permanently filed tape which precedes the individual order tape on the sending teletypewriter. The sending teletypewriter in Pittsburgh, even while transmitting the coded information to the allotted plant, is making a final five-part set of Sales Orders for use in the Pittsburgh headquarters. These copies, of course, carry all the information entered from the sales office, as well as the complete name and location of the plant receiving the order.

At the plant receiving the order, the teletypewriter activated by the coded message coming in from Pittsburgh writes the Sales Order on a five-part continuous form, the first part of which is a black spirit duplicating Plant Master. This master can be used to produce the various information copies of the entire order needed for various plant departments, and also, through the use of blockouts, to print specific information from the master on numerous other forms needed for various functions within the plant. These forms, of course, were re-designed to synchronize with the Sales Order.

As a result of this procedure, paperwork that used to take two to four days in getting an order to the producing plant has now been reduced to a few hours.

Within the plant, preprinted forms for package identification and shipping tags are identical in arrangement of data with a section of the sales order. This permits these forms, too, to be prepared either from the tape created at the time the order came into the plant, or from the Plant Master.

Only after the order is packed and ready for shipment is a new form created manually for the first time since the original sales order was typed on a Flexowriter in the sales office. A copy of the Sales Order and a summary of material to be shipped are given to a typist, who then prepares an Invoice Master and Shipment Manifest. Tape is not cut at this point, but the first part of this form is again a black spirit duplicator master, which can be used to create all necessary copies of the invoice. The other three sheets of the form serve as manifests: one for loading, one as a customer copy to accompany the shipment, and one as an extra copy available for the customer if he wishes it.

But the processing of the sales order is not complete here. It works in reverse too, from plant to Pittsburgh and to the sales office in which any given order originates. Thus, each plant cuts tapes each morning for two lists of shipments for the previous day—a "Daily Shipment List," which goes to the individual sales office concerned, and a "Daily Report of Shipments," which goes to Pittsburgh. In large plants with tabulating equipment, a card is punched for each order item shipped, and in these works, two five channel tapes are created by card-to-tape machines. In the other plants, the tapes are created by Flexowriter, just as the original Sales Orders are in the sales offices.

The Daily Shipment List, received in every sales office early on the morning of the day after shipment is made, has obvious benefits as far as customer service is concerned, and reduces the need for telephone and telegraph inquiries regarding shipments. The Daily Report of Shipments is received in Pittsburgh on a teletypewriter which produces a tape and three copies of a continuous form. The typed copies serve the needs of the Production Planning Division, and the Accounting Department; the tape produced is used to punch cards for machine accounting purposes. There the process, long in detail, but miraculously short in time, that began when an order was first typed in a sales office, ends at last.

The significant thing about the ALCOA system, which has been in full operation for some months now, is not its complexity—it is, actually, like any other system improvement, a simplification—nor its scope: it is the fact that the whole procedure was designed and has been accomplished with existing machines and equipment. Nothing has had to be specially designed, except the forms used within the system. ALCOA, instead of waiting for a bright dawn when a complete integrated data processing system was offered to it, went ahead on the basis of what is available now. The results have been everything that was hoped for, even though the company officials responsible for planning the new system did not attempt to evaluate in minute detail everything that would be accomplished under the system.

The ALCOA philosophy of systems improvement can be expressed this way: (*To page* 66)

Although the products of a great many equipment manufacturers have been used in the integrated data processing system designed to speed ALCOA's customer order procedure, the bases of the system are Commercial Controls Corporation's Flexowriter—an electric typewriter capable of reading five-channel tape and of creating such tape as a by-product of typing—and the continuous forms evolved by the Standard Register Company, in co-operation with ALCOA, which makes possible precision alignment of detailed information, automatically typed on similar forms at sending and receiving points.

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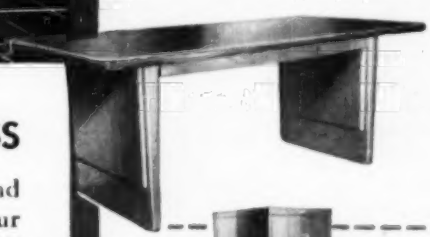
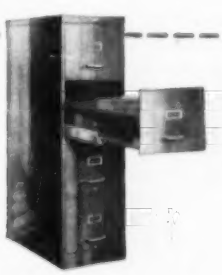
6276 Panel Leg Table—Seven sizes of office and conference tables embodying the same modern design and convertability





5401 Four Drawer Filing Cabinet—a style and size to meet every requirement.

ASE Swivel, Side and Posture Chairs Modernly Designed. Styled for beauty, comfort and efficiency.

SPA conference

(*From page 26*)

failure of office personnel, he added, that they have not proved to management the importance of what they were doing. They have failed to adopt the language which really motivates management.

Following this keynote message, John B. Joynt, manager, Administrative Engineering Department, American Enka Corp., spoke on "Systems and Procedures, A Top Management Responsibility." Mr. Joynt said that his company does not use the phrase, "systems and procedures." Instead, it describes these functions under the heading, "administrative engineering." This, he said, gives the function added breadth and depth, and accords it wider prestige.

The speaker discussed a series of qualities he considered important in the philosophy of management. It is important, he said, that management plan its objectives, that it create a balanced organization, that it establish sound policies and procedures, that it acquire qualified personnel and adequate facilities, that it set up comprehensive performance standards, and that it make an effective appraisal of its results.

Management, he added, often does not know anything about systems and procedures. In fact, he said, one of the major reasons for executive turnover is the complacency of top management.

The third speaker of the first morning session was Dr. Andrew Vazsonyi, head of Management Sciences Research, The Ramo-Wooldridge Corp. of Los Angeles. Dr. Vazsonyi's subject was "Operations Research."

Dr. Vazsonyi predicted that during the next few years the scientists would be able to develop many practical applications of mathematics to business problems. The electronic computer, he added, could be of tremendous value to business. And the whole science of operations research could do much to help business. In answer to a question from the floor, he commented that it was not just big business that could benefit from the scientific approach; small businesses can gain much, although they may be handicapped in some cases by not having the resources to set up an adequate program.

The afternoon session was devoted to discussions on the control of clerical costs, work simplification, and job enlargement.

Appearing at the Tuesday morning session were (l. to r.) speaker Edmund Dwyer, Emmett J. Leahy, Delbert Stubbe

The first of these subjects was treated by Willard F. McCormick and John E. Bradley, both of the firm of Cresap, McCormick & Paget, management consultants of New York and Chicago.

Mr. McCormick, speaking first, defined three principal areas in which systems work could be accomplished: (1) work elimination, (2) work simplification, and (3) work measurement and personnel utilization. Work elimination, he said, included many things, such as reducing the number of copies to be made of a given report, eliminating reports, and destroying useless papers instead of filing them.

Work simplification, according to the speaker, has been helped by developments initiated by the various industries supplying the office. Research and development work by manufacturers has generally disposed of the need for an engineer to design his own equipment. Further, he said, the gap between work simplification accomplishment in the office and in the factory appears to be closing rapidly. In time, progress in the office may even surpass that in the factory.

Mr. McCormick felt that the possibilities of work measurement and personnel utilization have not been explored as fully as they might. In order to show how a project in this field might be carried out, he then called on Mr. Bradley to describe a case history.

The company chosen for illustrative purposes was a large distributing organization with national operations. Its paper work problem was a big one. By way of defining levels of authority and responsibility in carrying out the work measurement program, management was considered to be operating at three levels: headquarters management, including the staff organization responsible for systems and procedures; district headquarters, responsible for supervising the various branches; and branch management, responsible for carrying out policies developed on higher levels. The particular project chosen for illustration was a payroll problem.

It was first necessary to plan the project on a national basis, assigning responsibilities as appropriate. Having determined the scope of the undertaking, the first step was to establish nationally uniform operating methods and procedures. The speaker commented that too much emphasis has been placed on methods analysis and not enough on work measurement. In this project, work measurement was considered to be a fundamental.

In measuring work output, the standard of a fair day's work was set up, allowing fifteen per cent of that time for rest periods and other interruptions, and considering that output should be based on a steady but not excessive pace during time worked. The work output so determined was assigned a rating of 100 per cent, as a basis for comparison. Allowances were made to account fairly for activities which could not be performed at a steady rate throughout the day. Where work was variable in its nature, standards were made to relate to time required for the job, or to units of work accomplished. Standard procedures were also set up, and other standards were devised to measure quality, including accuracy, of work. On the basis of pilot tests, it was decided that the standards so determined were reasonable and could be counted on to provide useful information. Moreover, since the same standards were to be applied nationally, all branches would be judged on the same basis.

Performance figures were related to dollar sales volume.

Conference registration of nearly 1200 made it largest SPA meeting ever held

Eventually a correlation could be shown between the sales volume at a particular branch and the number of man hours that would normally be required for the operations of that branch. Standard figures having been established, it was thus possible to determine which branches were not performing up to standard; the operations of those branches could then be examined to learn what corrective action needed to be taken.

This project was explained in considerable detail, and it was pointed out that the results obtained made it possible to determine the most efficient utilization of personnel. Following Mr. Bradley's explanation, Mr. McCormick summarized by stating that this approach constituted a sound method of eliminating and simplifying work, in contrast to the habit, indulged in by certain executives, of simply issuing an edict that clerical work must be cut by a specified percentage. The latter method, since it is not based on any actual knowledge of operations, cannot be expected to produce satisfactory results.

Roy W. Rix, general supervisor of the Work Methods Section, The Cleveland Electric Illuminating Co., then presented a paper entitled, "Work Simplification Is Participation By Everyone." Mr. Rix defined work simplification as "a methodical, scientific analysis of men, materials, methods, space and equipment used in the performance of all operations. It is nothing more than a common sense method for the elimination of all forms of waste, particularly the waste of human energy and human effort."

The speaker expressed the conviction that work simplification programs, to be successful, must be participated in by everyone in a company, and that that participation must be on a cooperative basis. He said, "The whole philosophy of work simplification is based on this one point, that the man on the job knows more about his job than anyone else, so he should participate in improving and simplifying his own job." Success in obtaining this participation, he said at another point, depends on providing proper incentive, which includes giving the employee sincere recognition for his efforts. "Any program of cost control or cost reduction," he stated, "will lead to increased productivity when people are allowed to participate in the program and when their feelings and basic human needs are recognized.

A basic principle in the program was the importance of good human relations. Mr. Rix said, "Our management people have found that encouraging their people to participate has resulted in an easier job for themselves. But to consult people you have to be humble, you cannot believe that you have all the ideas and that you know all the answers or that you are an expert." He said that there were five ideas that guided them in motivating people to do their best: "(1) We have to believe in people. (2) We must set a good example. (3) Let them participate. (4) Give recognition for extra effort and accomplishment. (5) Provide a wholesome work environment." He added, "You can see from this that effective leadership requires sincere concern for the employee as an individual and seeing that he is accepted and recognized for his participation."

The Cleveland Illuminating Electric Co. encourages its employees to submit proposals on how their jobs can be made more efficient. This is not a suggestion plan in the sense that monetary awards are made. Rather, the company accords recognition by such means as writing a letter of appreciation, signed by the employee's department head, using the name and picture of the employee in the company magazine and in a periodical called the *Work Simplification News*.

Virgil K. Rowland, personnel assistant to the secretary and general accountant, The Detroit Edison Co., followed Mr. Rix with a discussion of job enlargement. Mr. Rowland expanded on the idea that overspecialization of jobs can result in defeating the purposes for which it was established. While specialization may make it possible for an employee to become highly skilled in a particular activity, and thus theoretically to perform it more rapidly and more accurately, there is, said Mr. Rowland, a point of no return, beyond which specialization does more harm than good. This point, he said, is reached when employees become so bored or dissatisfied with their jobs that they begin to perform them at less than their normal capacity. What is needed is sufficient variety in the job that the employee does not take excess time off or that his interest does not falter beyond a point at which his performance is inaccurate or slow.

(To be concluded in the January issue)

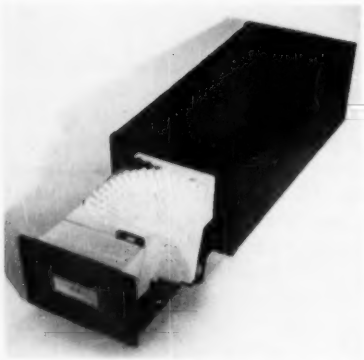
A Monthly Feature

Tools of the Office

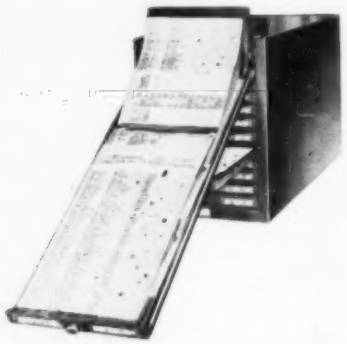
Visible Record Systems, Rotary, and Special Card Files Check Devices

Manufacturers' List on Page 44

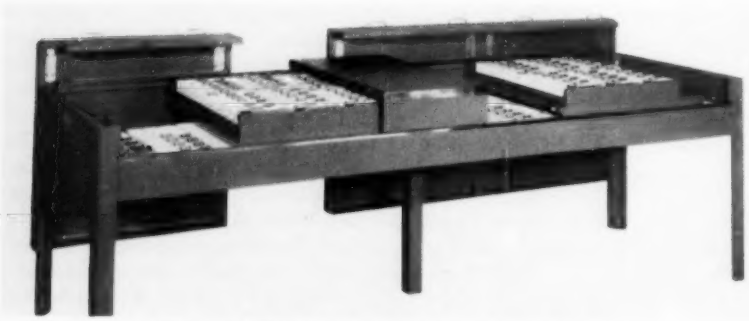
Remington Rand's No. RBK-85 "Robot-Kardex"



"Fandex" Filing System



Globe-Wernicke's No. 512



Watson's "Double Deck Rol-Dex Cross File"

Acme Visible Records' No. 100-T

Filing systems are generally considered to fall into one of two basic categories, vertical and visible. The term "vertical" as applied to filing does not mean that a record stands on one of its edges when filed. It actually refers to papers filed one behind another, or, in other words, "in depth." In this sense, it is opposed to the concept of filing in such a way that each paper is separately visible in its entirety—a method which might be called "horizontal" filing because, in effect, such papers would be filed side by side.

The word "vertical" was introduced into the field of filing in days when offices generally did not keep their records in an orderly manner, but let them lie in drawers, boxes, and pigeonholes. Once the obvious efficiency of the vertical system was realized, however, other methods were abandoned. The situation which led to the selection of the word "vertical" was then quickly forgotten, and the term persists to confuse those who do not appreciate its origin. Vertical systems are now sometimes referred to as "blind" or "non-visible" systems; while these terms are more precise, they are not especially popular.

Visible systems, on the other hand, are distinguished by the basic fact that at least some portion of each filed record is visible without moving the record above it. In practice, this normally means that at least one edge of each card projects to the side (or top or bottom) of the card immediately in front of it, thus displaying enough of the record to identify it; additional information is often included, and in some applications it is sufficient that a

record may be used without actually handling it.

In theory, it can be argued that all standard filing systems incorporate certain elements of both vertical and visible record keeping. Letters in a standard correspondence file, for example, are considered to be in a vertical arrangement, yet the folder and guide tabs are used in accordance with principles of visible filing. On the other hand, even in the most visible of the visible systems, at least a portion of the filed material is obscured behind the record in front of it; to this extent the vertical principle is employed.

For the purposes of this survey, visible systems are distinguished from vertical systems simply on the basis that each record in a visible system is designed so that at least a portion of it can be read without moving the records immediately in front of it.

It will be noted that the arrangement of records in trays, tubs, drawers, or on wheels is not a factor in determining whether a system is vertical or visible. For example, an electrically-powered rotary card file in which cards are carried in moving trays or on a wheel does not become a visible system merely because access to the cards is convenient and quick. If the cards are placed one behind another without projecting edges or tabs, which is the customary arrangement, the system is of the vertical type. On the other hand, there are certain systems designed to be arranged in drawers like standard vertical systems, yet, because each record or sheet has a visible section (resulting from the use of tabs or cut-out portions), the system should actually be considered to be of the visible type.

THE "Tools" schedule is being revised.

Beginning in February, "Tools" will appear in a new form, designed to make it still more useful to our readers than it has been in the past. The schedule for the first two months is as follows:

***February:* Equipment for Integrated Data Processing.**

***March:* Duplicating Equipment.**

Both the vertical and visible systems have advantages and disadvantages. In general, vertical systems are much more compact, use less expensive equipment, and are more readily expanded as need develops. Manufacturers of visible equipment, however, point out that authorities consider that a visible record can be located in about one-quarter the time required for finding a vertical record, and they argue that a visible system is therefore much less expensive to use.

It should be pointed out, however, that visible equipment varies considerably in design. In some systems, the records are held securely in place in loose leaf binders or in individual holders in card trays. In other systems, the records rest loosely, one overlapping another, in tub-like files. An examination of the systems described below in this survey will show still other methods.

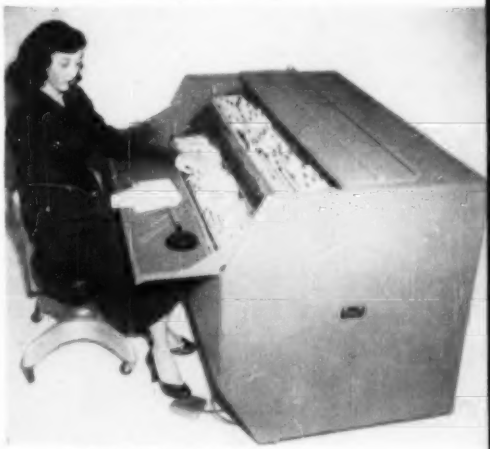
It is obvious, therefore, that visible systems vary considerably as to their compactness, capacity for expansion, initial expense of equipment, and other features. Each system has its special advantages and disadvantages. Momentarily disregarding the problems of locating a card in a vertical file, it may be said that in general it is easier to remove or replace a card in such a system than in a visible file. Manufacturers of certain types of visible equipment, in which cards ride loosely and are not attached, would disagree, and they would point out, further, that visible records are usually so printed that it is obvious at a glance when a card is missing or misfiled. This tends to prevent misfiling, and they consider that their systems are considerably more efficient to operate than are vertical systems. The factor of removability is important in files of records requiring frequent posting. It should be remembered that it takes as long to post on a visible card as on a vertical one, and, if the visible record cannot be readily placed in a position for comfortable writing, it may take longer. If posting is to be performed by machine, it is obvious that cards must be convenient to remove and replace.

A card in a vertical system cannot be located directly. The guide cards, of course, indicate the approximate location of a card, but it is generally necessary to thumb through a number of cards before locating the desired record. In addition to taking time, this

Diebold's "Super Elevator"

General Fireproofing's "Super Carder"

Wheeldex & Simpla's "Simplafind"



Ferris' No. 45 "Master"

procedure subjects all cards to considerable wear. Card handling, however, is considerably reduced in visible systems, and, especially in those systems in which the cards are protected by a transparent plastic handling edge, wear can be insignificant. It should be observed, incidentally, that one authority is of the opinion that most vertical files do not have sufficient guide cards to make them easy to use; he feels that there should be a guide to every ten or fifteen record cards.

In essence, the great advantage of visible methods over vertical methods is in the ease of locating records. They do not offer any special advantages in posting, and may actually hinder the making of entries, but they do permit summary information on a number of different cards to be inspected simultaneously for purposes of comparison. These advantages, it is argued, make for more efficient operation.

To offset these advantages, manufacturers of vertical equipment claim that their systems require considerably less space and are much less expensive to install. Where large numbers of cards are to be used, the use of motorized rotary equipment can greatly reduce the time required to locate cards, and, in any case, liberal use of guides can help to reduce the time factor.

The prospective user of equipment should, therefore, consider the nature of his operations and select his equipment in accordance with his particular needs. In addition to the factors listed above, it may be noted that whereas vertical systems can be easily expanded, some visible systems can while others cannot. Signalling systems are often easier to devise and operate when using visible systems than when using vertical ones. In addition, each particular system has its own advantages and disadvantages. A choice should not be made without careful study of the field.

This month's survey is devoted to visible equipment and to specialized forms of vertical equipment, such as rotary card files. For a general review of other filing equipment of the vertical type, consisting chiefly of correspondence files, see the October issue of *Office Management*.

Acme Visible Records, Inc.

Illustration. Page 36.

Model. No. 100-T.

Description. A rotary-type file, turning horizontally. Designed to hold 100 books, each of which can accommodate a large number of cards, filed according to visible methods. As shown, unit is used for 13 by 9-in. cards, filed two cards to the hanger, 84 cards to the book.

Rotary portion of file is surrounded by six desks for file clerks. Rotary unit mounted at desk height to permit books to slide from openings onto desks without lifting. Rotary section is 65 in. in diameter. Rotation of central unit controlled by three buttons; two of these govern direction of rotation, other is used for holding. Unit uses 110-volt current.

Price. According to the manufacturer, "under $1,000."

Other Equipment. Other rotary systems, some with three tiers. Sizes vary. Also a line of "Veri-Visible" equipment and forms of the visible type, for machine and hand posted records, together with sectional units, portable trays, etc., the "Super-Visible" line of visible card systems, card carrier units, drawer units, trays, lift-top cabinets, tub desks, and frames. Stands, brackets, and racks also offered. The "Flexoline" group of one-line visible indexes includes frames, stands, roll curtain desk stands, single and double tier rotary stands, brackets, cabinets, and supplies.

Art Metal Construction Co., Postindex Div.

Illustration. Opposite page.

Model. No. 5 "Postindex Flat Book."

Description. A book-type file made of aluminum. Holds 140 8 by 5-in. sheets with visible edges. Sheets are of four-page type, held in place by means of trunnion wires.

Desk models finished in grey and equipped with rubber bumpers. Also available for housing in cabinets. Cabinets made with single or double doors; construction of steel. To permit convenient transfer of existing card installations to Postindex, books are available with card pockets. Model shown is 18¾ in. long.

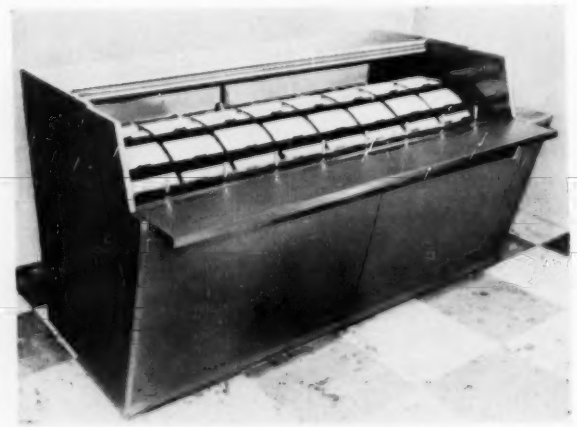
Other Models. Similar books varying in length from 11¾ to 18¾ in. with trunnion wires ranging from 5½ to 12 in. in length, and with sheet capacities from 50 to 320. Prices from $13.50 to $35, Zone 1. Cabinet capacities range from 8 to 20 books.

Business Efficiency Aids

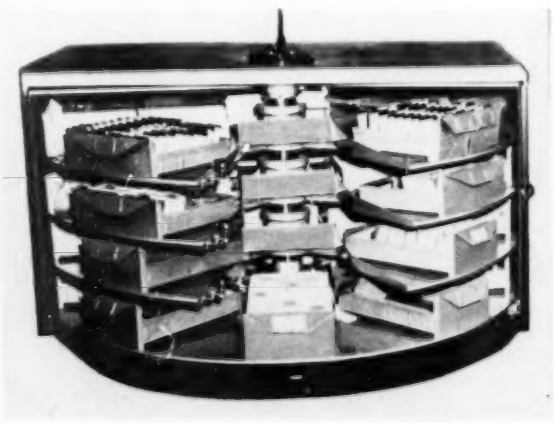
Illustration. Opposite page.

Model. "Magne-Dex" tray and cards.

Description. An unusual system combining principles of vertical and visible filing through the application of a magnetic principle. Cards are

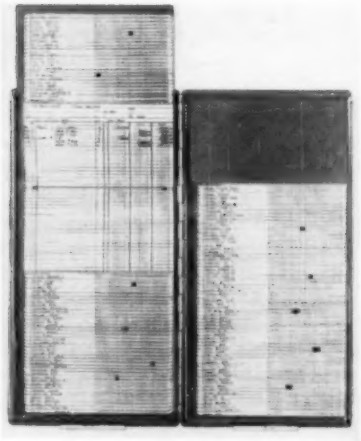


Mosler's No. D58S "Roto-File"



Wassell Organization's No. MRF1

Victor Safe Sectional File



Art Metal's No. 5 "Postindex"

Business Efficiency Aids' "Magne-Dex"

filed one behind another as in a standard vertical system. Tiny metal strips are embedded in tops of cards; when an index divider card is moved, these strips become magnetized by a permanent magnet built into the tray. The strips receive similar electrical charges; thus they repel each other, and a number of cards on either side of the divider are separated so that the top line of each is visible. Manufacturer states that magnetism is permanent and that cards can be used in typewriters and other machines without altering magnetic qualities.

Magne-Dex is available in thirteen card sizes and in 22 tray sizes. Tub desks and files available to fit. Unit capacities range from 500 to 10,000 cards. Recent additions to line include ledger-size cards and trays; trays have "V" bar devices to permit magnetism to be turned on and off.

Prices. From $37.50 to $1,000, depending on capacity and features.

Diebold, Inc.

Illustration. Page 37.

Model. No. 10760 "Super Elevator."

Description. A motorized rotary-type file in which cards ride unattached in trays. Trays remain horizontal at all times but move in an approximately circular path. Trays lift out easily and may be interchanged at will. Trays are 10 in. deep to provide a comfortable maximum reach and improve visibility of guides. Writing area provided at front of file.

File operates on 110-volt A.C. Push-button control brings tray desired to working level in three seconds or less. Trays accommodate records of any weight and size up to a height of 8¼ in. Standard tray sizes are 2¼ by 3, 5 by 3, 6 by 4, 8 by 5, and 7⅞ by 3¼ in. Maximum card capacity (varying with size and weight of card), 300,000.

Cabinet is of steel with fine-wrinkle grey enamel finish. Top can be closed. File has emergency safety device and provision for hand operation in case of power failure.

Dimensions: width, 81 in.; height, 48 in.; depth, 30 in.

Other Equipment. Two other rotary files: the "Cardineer," which carries cards on a circular ring, and the "Elevator," a tray file similar to the "Super Elevator" but smaller.

Also an extensive line of visible record equipment, including "Tra-Dex" and "V-Dex" systems.

Fandex, Inc.

Illustration. Page 36.

Model. "Fandex" filing system.

Description. A card filing system in which cards are mounted in pockets so arranged that cards can be "fanned out" as shown in the illustration to permit visibility of the top line of each of a number of cards. Cards fanned out by fingertip motion. One side of each pocket is open to permit cards to be offset for reference purposes.

Files housed in cabinets much like standard card file drawers of the vertical type, but drawer sides are cut low to allow room for fanning out of cards. Standard cards used; existing files can be readily transferred to this system.

Cabinets are of steel with interlocking features to permit stacking.

Ferris Business Equipment, Inc.

Illustration. Page 37.

Model. No. 45 "Master."

Description. A motorized rotary-type file in which cards ride unattached in trays. Trays are removable and interchangeable; tray depth is 8 in. Trays carried upright in tiers; tiers are pivoted on rotating wheel. Approximately one-third of records visible at all times; other records available in average time of three seconds. Operates on 115-volt AC. Provision made for manual operation in case of power failure.

Cabinet finished in grey, olive green, or medium brown wrinkle finish. Hinged posting table has rubberized linoleum writing surface. Cabinet mounted on four ball-bearing casters. Maximum card capacity, about 200,000, varying with size and weight of cards. Maximum card size, 12 in. high, 14 in. wide.

Dimensions: width, 54 in.; height, 38½ in.; depth, 34½ in.

Price. $1,550.

Other Equipment. Over 150 units, varying in size, capacity and features, at prices from $302 to $1,750.

The General Fireproofing Co.

Illustration. Page 37.

Model. No. 3588X "Super Carder" with attached posting table.

Description. A steel cabinet designed to house cards for accessibility from a seated position. Has eight drawers, yet is only 36 9/16 in. high. Drawers have full ball-bearing, zinc plated suspensions and wide aluminum pulls.

Each drawer measures 23 3/16 in. wide, 3⅞ in. high, and 29⅛ in. deep inside. Cabinet capacity: 195,200 2¼ by 3-in. cards, including indexing; 100,000 5 by 3-in. cards, or 68,000 7⅞ by 3¼-in. cards. Drawers have angle-ends to increase capacity.

Variety of drawer types available, including double-height box drawers, one of which can be substituted for two standard drawers. Base available to raise working height if desired.

Posting table has sliding top which can be extended 11¼ in. beyond card cabinet. Table can be mounted as shown, or in arrangement between two cabinets.

Dimensions of cabinet, overall: height, 36 9/16 in; width, 26 1/16 in.; depth, 30⅜ in.

Price. Of the cabinet, $274 list, Zone 1. Of the posting table with two legs, $105.75.

Other Equipment. A similar cabinet with five drawers. Various types of trays and substitute drawers.

The Globe-Wernicke Co.

Illustration. Page 36.

Model. No. 512.

Description. A cabinet file with twelve tray-type drawers, holding a maximum of 984 5 by 3-in. cards with bottom lines visible.

Cabinet of steel with all joints welded. Has double-wall construction to increase fire resistance. Equipped with intermembering strips on top to permit cabinets to be assembled in batteries of any desired height. Finishes: grey, green, grained walnut, grained mahogany.

Dimensions: height, 13½ in.; width, 7¼ in.; depth, 25 in.

Other Equipment. An extensive line of cabinets with 6, 12, and 24 drawers, for nine sizes of cards. Also a line of visible reference record equipment in which paper strips carrying one or two lines of information are inserted in celluloid tubes, the tubes being mounted on steel frames so that all information is visible; line includes rotary and desk stands and wall racks.

Herring-Hall-Marvin Safe Co.

Illustration. Opposite, bottom left.

Model. No. 1058-FM.

Description. A motorized file of the rotary type, operating on 110-volt AC. Cards rest unattached in 12 sections around circumference of wheel, held in place by polished retaining bands on each side.

Cards easily removed for posting; "floating" dividers maintain open "V" at point where card is removed, to facilitate replacement. Rotor turns in either direction at approximately 8 r.p.m.; control is of roll-switch type.

Capacity: from 5,000 to 7,500 cards, varying with thickness of cards. This model accommodates 8 by 5 in. cards. Cabinet of steel, finished in smooth grey lacquer. Mounted on four hard rubber casters. Has cover.

Dimensions: height with cover closed, 35 in.; width, 12¼ in.; depth, 32⅜ in.

Other Equipment. Similar models for 6 by 4-in., 5 by 3-in.; and 7⅜ by 3¼-in. cards. Corresponding sizes also available without power drive. Also a line of posting tables, posting shelves, desk trays, guides, printed guide inserts, etc.

Le Febure Corp.

This company manufactures a system of indexed ledger sheets called "Speedex," which was described on page 42 of the November issue of *Office Management.* While Speedex is regarded as a filing system rather than as an item of visible record equipment, it makes use of certain visible record principles.

By a system of tabs and cut-out notches each sheet in the file can be located without removing the sheets immediately in front of it, and signals show when sheets are removed or misfiled. The system is designed to fit in standard file drawers and does not require special equipment.

The Mosler Safe Co.

Illustration. Page 38.

Model. No. D58S "Roto-File."

Description. A motorized card file of the rotary type. An unusual feature is that the cards are carried unattached on eight independent rotating drums instead of in the tray arrangement customary in rotary files of this size. Each drum is, in effect, a wheel-type file in which the cards are held in place by means of a band; cards may be easily removed, and drum design is such that "V" opening is automatically made and maintained to permit easy refiling.

Each of the eight drums may be rotated independently of the others, thus permitting several operators to work with the files simultaneously, or all drums may be rotated together.

File uses 110-volt AC; DC models available. Manual operation provided in event of power failure.

Cabinet of steel, wheel assembly of aluminum. Standard finish: grey; optional finishes: medium brown or olive green.

Model shown accommodates 78,000 7⅜ by 3¼-in. tabulating cards.

Other Equipment. Similar files for 8 by 5-in., 6 by 4-in., and 5 by 3-in. cards. Also a line of "Revo-Files," which are smaller.

The National Blank Book Co.

Illustration. Opposite, right center.

Model. No. 89-832 "Prongmaster."

Description. A loose-leaf binder for visible records. Sheets arranged with one-line overlap. Equipped with automatic shift to permit removal or insertion of sheets without altering the sequence of other sheets in the same bank.

Shift has two positions. One of these, the working position, is set by touching a lever; in this position, binder lies flat, but the curved prongs have sufficient overlap to hold sheets securely in the binder. In the second position, the prongs open completely to permit removal or insertion of pages. Shift has lock to prevent accidental full opening. Binder has sheet lifters to raise sheets over prongs.

Binding is of grey Brittany vinyl twist. Prong mechanism is nickel plated. Binder furnished with metal rims and hinges. Recessed label holder provided in back.

This binder offered in several sizes with two-inch and three-inch capacities. One of these can accommodate up to 33 3⅛ by 8½-in. sheets per bank, with a total capacity of 1,980 sheets.

Prices. From $33 to $40.

Other Equipment. The "Ringmaster" series of visible units with metal rims; trays; stands; and forms.

Remington Rand Inc.

Illustration. Page 36, top right.

Model. No. RBK-85 "Robot-Kardex."

Description. A motorized file in which visible-type records are carried in trays. Unit is in the form of a cabinet with a desk-like extension at the front to provide a posting position. This extension has two slides, each equipped to hold a card tray. Within the cabinet are 60 trays, mounted in two counterbalancing banks of 30. By the operation of selector keys on the extension, the desired tray is delivered at desk level, where it is automatically placed in one of the slides and moved into a position convenient for posting. When it is desired to work with another tray, the operator presses another

Visirecord posting tray

key; the tray is withdrawn and the new tray is automatically moved into position.

Each tray can accommodate 67 8 by 5-in. cards, giving the unit a total capacity of 4,020. Cards are held in trays with ¼-in. of each card exposed.

Unit operates on 110-volt DC; a rectifier is provided to convert AC into DC. Manual controls furnished in case of power failure.

Dimensions: height, 63 1/32 in.; width, 25⅜ in.; depth, 53¼ in. Posting height, approximately 32 in. Finish: grey.

The C. E. Sheppard Co.

This company offers a complete line of visible record binders and forms, together with accessories and supplies.

The "Flat-Rite" line of loose leaf binders is available in index sheet sizes from 12½ by 8½ in., to 18½ by 18 in., and with two- and three-in. capacities. Binders finished in black Levant grained imitation leather with metal hinge and two metal label holders. Some have metal rims on covers. Other binders have walnut-grained bakelite covers. Flat-Rite binders have automatic shift device; in working position, binder lies flat but prongs overlap sufficiently to keep records in place; in fully open position, prongs open to permit removal or insertion of sheets. Lock is furnished to prevent accidental full opening. As many as 40 records visible at a time; records arranged in banks. Total sheet capacities up to 1,500. Flat-Rite binders priced from $29 to $46. Walnut-grained covers extra.

Also available are binders of the "Vis-Dex" line, which have piano-hinged metal casings. These binders also equipped with automatic shift. The "Master Visible" line of binders are of the non-shift type; the "Junior Visible" line is similar.

The company also offers visible folder units, visible record transfer binders, posting tables, visible record forms of many types, indexing accessories, etc.

Victor Safe & Equipment Co., Inc.

Illustration. Page 39, top left.

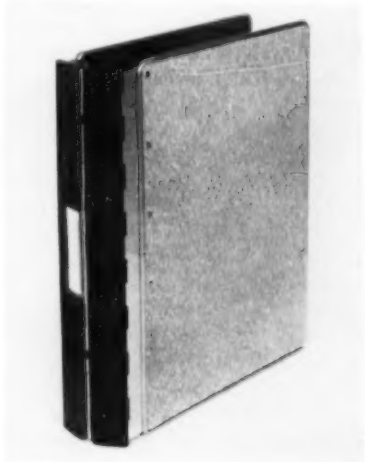
Model. Sectional file composed of No. 85TS top section, seven No. 851 center sections, and one No. 85BS bottom section.

Description. A tray-type visible file composed of sections to permit expansion as required. Each section designed to interlock rigidly with sections below and above. Constructed of steel, with Kraft paper and celluloid card pockets. Cards arranged to expose bottom line of each card. Accommodates 8 by 5-in. cards. Variety of forms available for use with this equipment.

Center units are 10 in. wide, 18 in. deep, and 1⅛ in. high.

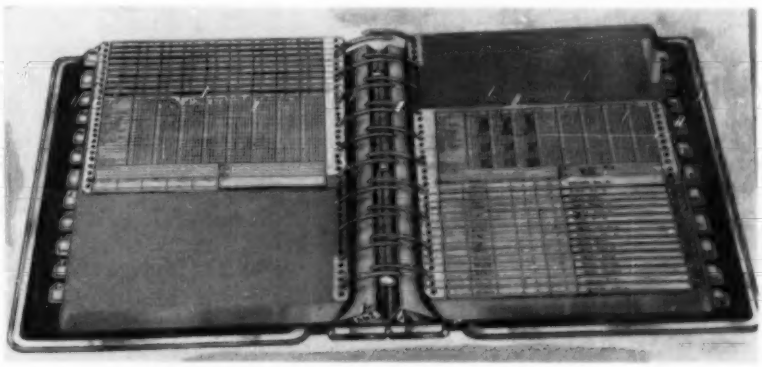
Other Equipment. Similar models offered for 5 by 3-in. and 6 by 4-in. cards. Also "Book Visible" portable books, "Recordex Visible" records designed to fit in a desk drawer or briefcase, a sectional visible line made of wood, and a line of tube reference equipment, together with appropriate forms.

Zephyr American's No. FM 5804 "Rolodex"



National Blank Book "Prongmaster"

Herring-Hall-Marvin's No. 1058-FM



Wilson Jones' No. FB 13208 "Shif-Dex"

Visirecord, Inc.

Illustration. Preceding page.

Model. No. ETE0V.1 posting tray.

Description. A tray designed for use with Visirecord cards. The top corners of these cards are cut diagonally to give three visible margins when the cards are placed in the posting unit. Cards rest in banks with two columns at right side of each card exposed, in addition to the diagonal margin and a portion of the top.

Tray can accommodate approximately 9,500 5¼ by 8-in. cards in a space 30 in. long and 24 in. deep. The manufacturer claims that angle tab Visistrip indexing makes it possible to locate any card in from two to four seconds. Signals on cards indicate when a card is missing.

Other Equipment. Visirecord manufactures more than 20 basic units, including posting trays, well tables, and single and double posting desks. Several hundred variations of these are available, at prices ranging from $35 to $900. Trays such as the one shown accommodate cards in heights of 5, 6, 8, 10, 11, and 12 in. and in any width up to 40 in. folded.

Wassell Organization, Inc.

Illustration. Page 38.

Model. No. MRF 1.

Description. A card file which rotates horizontally. Cards ride unattached in trays arranged in tiers. Unit shown is actually a section; sections can be added one above another to provide added capacity. Single sectional unit pictured can accommodate up to 12,000 2¼ by 3-in. cards, or 7,500 12 by 9-in. cards. Cards of various sizes can be handled in same unit.

Unit constructed of steel, finished in grey hammertone. Files are rotated manually. Designed to be operated from a seated position.

Dimensions: width and depth, each 48 in.; height 24 in.; height with base, 27¼ in.

Price. $411 to $1,106 per section, depending on card size.

Other Equipment. A total of 64 modular units with from one to four sections. Line includes models for numerous sizes of cards. Also available in double and single pedestal desk units.

Watson Mfg. Co., Inc.

Illustration. Page 36.

Model. "Double Deck Rol-Dex Cross File."

Description. A file for tabulating cards, with cards arranged in two tiers of trays; trays of the upper tier are easily moved to the side to permit access to those below. Trays mounted on sealed ball bearing rollers. A rolling work shelf is also provided. Unit designed to permit clerk to handle all records without moving from chair.

Unit shown can house approximately 70,000 tabulating cards. Construction is of steel, with aluminum covers that drop to the back when opened.

Rol-Dex equipment is custom built and can be made to fit records of any size.

Other Equipment. A line of similar equipment, custom built to user's specifications.

Wheeldex & Simpla Products, Inc.

Illustration. Page 37.

Model. "Simplafind."

Description. A motorized rotary-type card file in which cards ride unattached in trays. Trays mounted in tiers that move in an approximately elliptical path; trays remain upright at all times. Trays are short, to keep cards within convenient reach of seated operator, and are removable.

Rotation of trays is push-button controlled, bringing desired tray to desk level in an average time of less than three seconds. Hinged desk area provided at front of unit. Front of cabinet slopes inward at bottom to provide knee and leg space.

Simplafind available in several sizes, with capacities from 50,000 to several hundred thousand standard-size records. Units can accommodate records of numerous sizes and types.

Other Equipment. Two other types of rotary equipment: Simplawheel, in which cards ride in stabilized cradles suspended from a wheel; and Wheeldex, in which cards are attached directly to a continuous ring.

Wilson Jones Co.

Illustration. Preceding page.

Model. No. FB 13208 "Shif-Dex."

Description. A loose-leaf type binder for visible records. Records arranged in banks of up to 40, with maximum capacity of 2,000 sheets in binder.

Binder available in black Levant grain or brown Cordoba imitation leather covers with steel rims on four sides and metal hinges. Backbone furnished with bakelite strips to protect furniture. Has twin label holders.

Binder has sheet lifters and is equipped with automatic shift. At the touch of a lever, the binder opens to a working position in which it lies flat; the prongs continue to overlap in this position to prevent sheets from falling out. In a second position of the shift the prongs open fully to permit removal or insertion of sheets; a shift lock prevents accidental full opening.

Binders of this type available in two- and three-inch capacities, in sizes from 12½ by 8½ to 18½ by 18 in. Visible record forms available in sizes from 3 1/16 by 5¼ in. to 6⅛ by 10⅜ in.

Prices. From $34.15 list.

Zephyr American Corp.

Illustration. Preceding page.

Model. No. FM5804 "Rolodex."

Description. A manually-operated card file of the rotary type. Cards carried unattached in suspended trays which are pivoted to remain upright at all times. This unit differs from other rotary files in that trays rotate sideways, that is, to right or left as the operator faces the cards. Tray movement controlled by knob near top of cabinet.

Cabinet has sliding cover; when cover is opened it provides a working area of two extension tables, plus a pull-out leaf. Cards are brought to desk level between the two sections.

Unit mounted on ball-bearing rubber casters. Card trays equipped with adjustable follow blocks. Finished in grey.

This model available in three sizes to accommodate 8 by 5-in., 6 by 4-in., and 5 by 3-in. cards. Model shown is for 8 by 5-in. cards and has a capacity of 4,000 or more cards, varying with card thickness.

Dimensions: height, 30 in.; width, 15½ in.; depth, 26 in.

Price. $159.95.

Other Equipment. A line of small "Rolodex" and "Autodex" desk model rotary card files, together with supplies.

Check Devices

The American Perforator Co.

Illustration. Page 45.

Model. No. 9A.

Description. A check endorser operating on 110-volt current. Checks are hand fed; as check drops into machine

it automatically trips a clutch causing machine to print endorsement. Checks are fed into machine vertically (turned half over) and are stacked automatically; storage capacity is approximately 350 checks. Operating speed, 150 cycles a minute.

Unit has perpetual dating wheels, standard endorser die, adjustable stand, and dust cover. Inking is automatic.

Optional equipment includes check counter, chute, etc.

Price. $350 to $450, varying with features.

Cummins-Chicago Corp.

Illustration. Right, top.

Model. 270 series check signer.

Description. A check signer which can be converted to a check endorser by replacing signing dies with endorsing dies. Operates on 110-volt AC; can be adapted for DC. The manufacturer claims an operating rate of 27,000 per hour. Feed is automatic, and signed checks are stacked automatically in hopper.

Unit has the following security features: cover has a lock, to prevent unauthorized insertion or removal of signature die and to prevent unauthorized setting of check counter. A locking switch key also provided; this turns machine off and makes it inoperative, even though dies are in position to sign.

Dates changed by turning date wheels. Inkwell has ink capacity for half a million checks; no ribbons used. Ink flow can be adjusted for heavy or light signatures.

Dimensions: height, 14 in.; width, 12¾ in.; depth, 16 in. Finish: grey wrinkle.

Price. $1,195. Stand, mounted on casters, $32.50.

Other Equipment. A number of other check signers and endorsers, varying in features and capacities.

Hall-Welter Co., Inc.

Illustration. At right.

Model. "Chexsigno" check signer.

Description. An electrically-operated check signer. Provides a "serrated" signature, designed to eliminate the hazard of duplication. Adaptable to a variety of signing needs.

Other Equipment. Models of Chexsigno signers available for hand or electric power; these are priced up to $230. Also available is the "Speedrite" checkwriter.

The Hedman Co.

Illustration. Right, bottom.

Model. "Premier Electric" check signer.

Description. An electrically-operated check signer. Prints a "forgery-proof" signature; facsimile plate shreds signature into fibers of check paper with indelible ink.

Machine has two locks and keys, one for operator and one for responsible official; machine will not operate unless both locks are used.

Rate of operation, 3,000 checks per hour. Machine equipped with nonresettable meter to register each check imprinted; checks counted automatically.

Dimensions. Height, 8 in.; width, 7 in.; depth, 13 in.

Price. $268.50, f.o.b. factory.

Other Equipment. A similar model, manually operated, priced at $174.50. Also a hand and an electric voucher model.

Monroe Calculating Machine Co., Inc.

Illustration. Page 45.

Model. No. D-10-ww Keyboard Check Writer.

Description. An electrically-operated keyboard-type checkwriter. Provides for automatic imprinting and ejection of checks. Checks stacked automatically.

Operating rate: 1,000 payroll checks or 700 accounts payable per hour. Type style designed to prevent alteration of figures. Figures printed in indelible acid-proof ink which impregnates paper fiber. Keyboard has 10 places, and unit can print British as well as U. S. currency symbols. Company designation can also be printed.

Type is of steel. Unit measures 8½ by 11 in.

Price. $365.

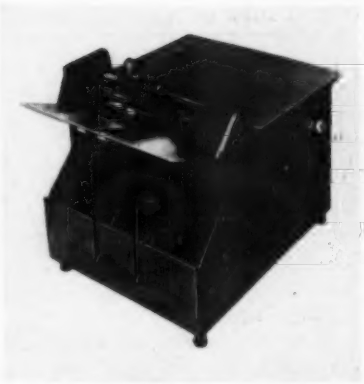
Other Equipment. Hand and electric models, including single and voucher check signers.

The National Cash Register Co.

Illustration. Page 45.

Model. No. 87 check writer and accounting machine.

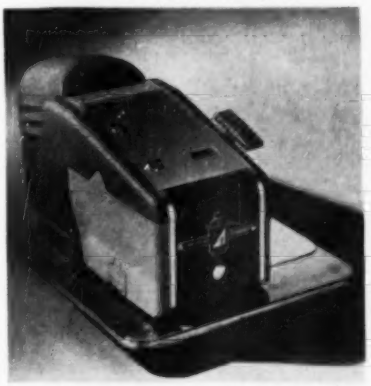
Description. A combination check writer and accounting machine. Performs the following functions: itemizes earnings and deductions on check or



Cummins-Chicago's No. 273

Todd's No. 78 "Protectograph"

Hall-Welter's "Chexsigno"



Hedman's "Premier Electric"

check stub; prints date and check number; signs or signs and countersigns check; prints payroll period; accumulates earnings and deductions in individual, locked totals; counts checks; automatically creates journal (check register); feeds next check into position automatically when sheet checks are used; spaces check register to next posting line.

Protective features include the following: totals can be cleared only after total lever and individual locks on each accumulating control key are unlocked; individual item counters advance with operation of each control key (optional), these counters protected by lock-controlled cover and detector counter which advances each time lock is operated; machine becomes inoperative if attempt is made to manipulate totals by complementary subtraction; automatic advancing of check number and date protected by locked cover; machine lock used to make machine completely inoperative; form sensing lock keeps machine from operating until all forms are properly inserted in printer; signature plate lock prevents unauthorized persons from inserting signature plate into machine.

Operating rate: 400 to 450 per hour, including itemization of deductions. Checks cut and stacked automatically in separate unit. Can be ordered with provisions for printing symbols of currencies other than U. S.

Other Equipment. Model 81 and several variations of this model, providing a selection of special features.

Pitney-Bowes, Inc.

Illustration. Opposite, bottom.

Model. No. Tic-3 "Tickometer."

Description. An electrically-operated counting and imprinting machine which has many uses, including check signing, check endorsing, check canceling, and check counting. Operates on 110-volt AC.

Has a tamper-proof cumulative total counter which records up to 99,999,999 and resets automatically to zero; also has a set-back counter to record individual runs. Imprinting die easily removed for safekeeping.

Other features include adjustable stacker; gauge which can be set to handle a particular thickness of paper, stopping machine if paper of other thickness is inserted; automatic feed operating at from 500 to 1,000 sheets a minute.

Can be equipped to print symbols of any currency.

Other uses include counting of tickets, currency, sales slips, etc. Can be used to imprint dates and other information.

Price. $1,460. Can be rented at a rate of $420 for the first year, $300 per year thereafter.

Other Equipment. Model DU, a post office canceling machine, can be adapted for counting and/or imprinting, including endorsing and backstamping.

Safeguard Corp.

Illustration. Opposite, top.

Model. "Instant H."

Description. A manually-operated check writer of the keyboard type. Name of payee and amount protected by single operation. As amount keys are set on keyboard, register at top of keyboard shows amount as set. Special currency slide available for international models.

Check shelf has throat opening full width of machine. Shelf is inclined so that checks slide into printing position. Shelf has horizontal and vertical scale for check placement.

Individual name or registered number can be printed in amount line if desired. Special security lock to prevent unauthorized use is provided in hidden location.

Dimensions: height, 8 in.; length, 12 in.; width, 6 in.

Price. $109.50.

Other Equipment. The "Instant K," which has pivot keys; and a voucher model, both manually operated.

The Todd Co., Inc.

Illustration. Preceding page.

Model. No. 78 "Protectograph Disburser."

Description. An electrically-operated check writer. Amount printed in indelible ink; paper fiber shredded to prevent alteration. Amount, date, and safeguarded signature printed in same operation. Can print about 600 protected checks an hour.

Signature plate is of special type. Signature prints against a background design and appears in a pattern of several colors of indelible ink. Further protection provided by fact that machine can be operated only when both of two tamper-proof locks are opened.

Unit has non-resettable meter to count each signature. Type is of brass, case of cold-rolled steel, finished in grey wrinkle. Dimensions: height, 10½ in.; width, 8½ in.; depth, 13 in.

Machine prints symbols of U. S. currency; other symbols available on special order.

Price. $498.50 list.

Other Equipment. No. 73 is similar but is hand-operated. Line also includes No. 31 automatic check signer and No. 32 feeder.

Manufacturers' List

Visible Record Systems, Rotary and Special Card Files

Acme Visible Records, Inc.
Crozet, Va.

Albany Novelty Mfg. Co.
107 W. Canton St., Boston 18

Art Metal Construction Co., Postindex Div., Jamestown, N. Y.

Ashley Mfg., Harry K.
2305 Cherry St., San Leandro, Calif.

Automatic File & Index Co.
549 W. Washington Blvd., Chicago 6

Boorum & Pease Co.
84 Hudson Ave., Brooklyn 1, N. Y.

Business Efficiency Aids
8114 Lawndale Ave., Skokie, Ill.

Crosby Research Institute, Inc.
9028 Sunset Blvd.,
Hollywood 46, Calif.

Daco Card & Index Co.
301 Congress St., Boston 10

Diebold, Inc.
Canton 2, Ohio

Fandex, Inc.
126 Liberty St., New York 7

Ferris Business Equipment, Inc.
244 Great Meadows Rd.,
Stratford, Conn.

Filing Equipment Bureau, Inc.
27 Melcher St., Boston 10

General Fireproofing Co., The
Youngstown 1, Ohio

Globe-Wernicke Co., The
5025 Carthage Ave.,
Norwood, Cincinnati, Ohio

Heineman Office Equipment Co.
4 N. 8th St., St. Louis 1

Herring-Hall-Marvin Safe Co.
1550 Grand Blvd., Hamilton, Ohio

International Loose Leaf Co.
80 Wall St., New York 5

LeFebure Corp.
716 Oakland Rd., N.E.,
Cedar Rapids, Iowa

Master-Craft Corp.
831-903 Cobb Ave.,
Kalamazoo, Mich.

Master Products Mfg. Co.
3480 E. 14th St., Los Angeles 23
McMillan Book Co.
701 E. Genesee St., Syracuse 1, N. Y.
Mosler Safe Co., The
Hamilton, Ohio
Motor File
9028 Sunset Blvd., Los Angeles 46
National Blank Book Co., The
Holyoke, Mass.
Nebraska Salesbook Co.
21st St. and "Y" St., Lincoln, Neb.
Palley Mfg. Co.
280 Main St., Worcester 8, Mass.
Remington Rand Inc.
315 Fourth Ave., New York 10
Ross-Gould Co.
309 N. 10th St., St. Louis 1
Selectofile
2814 Canton St., Dallas
Sheppard Co., The C. E.
44-01 21st St., L. I. City 1, N. Y.
Stationers Loose Leaf Co.
524 N. Broadway, Milwaukee 1
Victor Safe & Equipment Co., Inc.
315 Fourth Ave., New York 10
Visirecord, Inc.
Copiague, L. I., N. Y.
Vue-Fax Corp.
655 Main St., Westbury, L. I., N. Y.
Wassell Organization, Inc.
Westport, Conn.
Watson Mfg. Co., Inc., Rol-Dex Div.
Jamestown, N. Y.
Wheeldex & Simpla Products, Inc.
40 Bank St., White Plains, N. Y.
Wilson Jones Co.
209 S. Jefferson St., Chicago 6
Yawman & Erbe Mfg. Co.
1045 Jay St., Rochester 3, N. Y.
Zephyr American Corp.
95 Morton St., New York 14

Check Devices

American Perforator Co., The
617 W. Jackson Blvd., Chicago 6
Checkmaster Systems, Inc.
400 Madison Ave., New York 17
Cummins-Chicago Corp.
4740 No. Ravenswood Ave.,
Chicago 40
Hall-Welter Co., Inc.
42 Mt. Hope Ave.,
Rochester 20, N. Y.
Hedman Co., The
1158 W. Armitage Ave., Chicago 14
Joslin Mfg. Co., A. D.
123 Arthur St., Manistee, Mich.
LeFebure Corp.
716 Oakland Rd., N.E.,
Cedar Rapids, Iowa
Monroe Calculating Machine Co., Inc.
555 Mitchell St., Orange, N. J.
National Cash Register Co., The
Main & K Sts., Dayton 9, Ohio
Pitney-Bowes, Inc.
Walnut and Pacific Sts.,
Stamford, Conn.
Roderick Co., Marcy F.
3312 Lancaster Ave., Philadelphia 4
Roovers Bros., Inc.
3611 14th Ave., Brooklyn 18, N. Y.
Safeguard Corp.
320 Walnut St., Lansdale, Pa.
Speedograph, Inc.
5440 So. Ashland Ave., Chicago 9
Stewart & Co., Inc., R. A.
80 Duane St., New York 7
Todd Co., Inc., The
1150 University Ave.,
Rochester 3, N. Y.
United Equipment Co.
1101 Lee Highway, Arlington, Va.

Chicago business show set for February

The thirteenth annual Management Seminar and Business Show, sponsored by the Office Management Association of Chicago in conjunction with Northwestern University, has been scheduled to begin on Monday, February 28, 1955 at the Conrad Hilton Hotel, Chicago, according to a recent announcement from Alfred H. Dorstewitz, general chairman.

Seminar meetings will continue for three days while the exhibit will be open for four.

Harter begins manufacturing operations in Canada

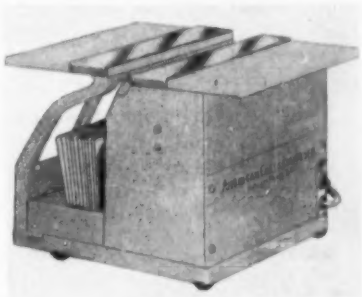
Harter Corp., of Sturgis, Mich., manufacturer of steel office chairs, will start manufacturing operations in Canada soon after the first of the coming year, it was announced recently by Evan S. Harter, president.

The firm has leased a recently constructed plant in Guelph, Ontario, which is approximately forty miles west of Toronto. Harter will conduct Canadian operations through a wholly-owned subsidiary, Harter Metal Furniture, Ltd.

Mr. Harter also announced that Guy E. Laughlin of Sturgis will be general manager of the new company and will be located in Guelph. Mr. Laughlin at present is Manager of National Accounts for Harter in the United States.

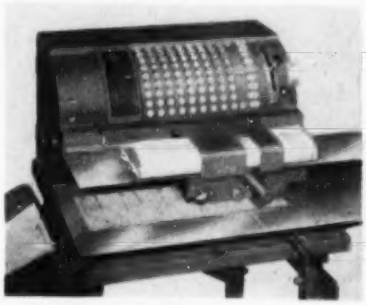
The company plans eventually to make most of the models of its line of executive and stenographic chairs in the new plant.

Safeguard's "Instant H"

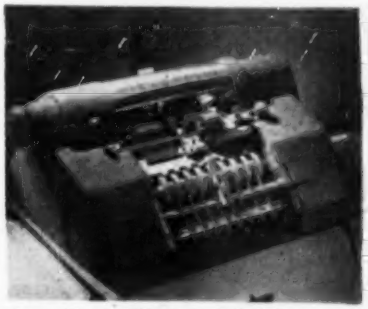


American Perforator's No. 9A

Monroe's No. D-10ww



National Cash Register's No. 87



Pitney-Bowes' No. Tic-3 "Tickometer"

Coming Events

American Management Association
December 9-10
Special Conference on Training
Atlanta Biltmore Hotel, Atlanta

●

American Institute of Accountants
December 10-11
Conference on New Tax Law
Hotel Statler, St. Louis

●

University of Michigan
January 6-7
Ninth Annual Business Machines and Supplies Exhibit
Rackham Building, University of Michigan, Ann Arbor

●

American Society of Heating and Ventilating Engineers
January 24-28
Twelfth International Heating and Ventilating Exposition
Commercial Museum and Convention Hall,
Philadelphia

●

University of Wisconsin
Wisconsin Manufacturers Association
February 15
March 15
April 19
May 17
Conference for Office Managers
Wisconsin Tower Building
Milwaukee

●

Office Management Association of Chicago
Northwestern University
February 28-March 3
Thirteenth Annual Management Seminar and Business Show
Conrad Hilton Hotel, Chicago

●

National Association of Cost Accountants
April 12-15
Eighth Annual Southern California Business Show
Biltmore Hotel, Los Angeles

●

National Office Management Association
May 22-26
Thirty-Sixth International Conference and Annual Office Machinery and Equipment Exposition
Royal York Hotel and Mutual Arena,
Toronto, Ontario

Noise reduction affected by furniture location

The Wood Office Furniture Institute offers advice on how to locate office furniture to reduce noise and to provide efficient use of space.

According to the Institute, sound reduction can be achieved by pulling desks away from walls and partitions, isolating machine equipment, and by using wood desks and equipment, as well as by using acoustical materials on walls and ceilings and by installing carpeting.

However, the Institute added, filing cabinets and safes should be placed against walls, preferably near pillars, as a means of reducing strain on structural beams.

WOFI stated further that when desks and furniture are to be placed in an office, 60 inches of space should be allowed for main aisles and 44 inches for intermediate aisles. For secondary aisles, according to Institute studies, a width of 36 inches is required. These widths are selected as offering the best combination of mobility and space utilization.

AMA training conference to be held in Atlanta

A special conference on training will be conducted under the sponsorship of the American Management Association at the Atlanta Biltmore Hotel, Atlanta, Ga., on December 9th and 10th.

The conference will consist of general sessions and small study groups. The program is scheduled to begin with a speech on "Mobilizing Personnel for Expanding Industrial Frontiers," by Col. Blake R. Van Leer, president of the Georgia Institute of Technology. He will be followed by W. M. McFeely, vice president and director of industrial relations for the Riegel Textile Corp. and the Riegel Paper Corp., of New York, who will discuss, "Management Appraises Its Training Program."

The third speaker of the morning session will be Dr. Francis F. Bradshaw, president of Richardson, Bellows, Henry & Co., Inc., of New York. Dr. Bradshaw's subject will be "New Developments in Applied Employee Training."

During the afternoon and the following morning, conferees will break up into four study groups. These smaller groups will discuss such subjects as "Selection, Orientation, and Early Field Training of Salesmen," "Training the Experienced Salesmen," "The Hourly Worker," "The Office Employee," "A Critical Look at Supervisory Training," "Clarifying the Supervisor's Personnel Job," "Setting Up Functional Management Development," and "Latest Techniques in Improving Managerial Performance."

On the final afternoon, all registrants will listen to a conference synthesis at which the chairman of the four study groups will summarize the essential accomplishments of their sessions. This will be followed by a symposium in which these four men will serve as a panel to answer questions from the floor.

Further information on the conference may be obtained from the American Management Association, 330 W. 42nd St., New York.

Accountants plan conference on new tax law

The new tax law will be the subject of a national conference for business executives to be held December 10-11 at the Hotel Statler, St. Louis, by the American Institute of Accountants.

An announcement from the AIA stated that the conference "will discuss the effect of the new tax law on business decisions in relation to dividend policy, employee pay and fringe benefits, arrangements with executives, depreciation and capital equipment policy, new administrative procedures and other vital areas."

The discussions will be led by prominent certified public accountants, members of the Institute's Federal tax committee, which had much to do with the writing of the new law.

Information about the conference may be obtained from the American Institute of Accountants, 270 Madison Ave., New York.

University of Michigan plans business show

The ninth annual Business Machines and Supplies Exhibit will be held January 6 and 7 in the Rackham Building of the University of Michigan, Ann Arbor, under the sponsorship of the university's School of Business Administration. The exhibit is given each year to provide students and business men from Ann Arbor and vicinity an opportunity to see the latest developments in the field of business machines.

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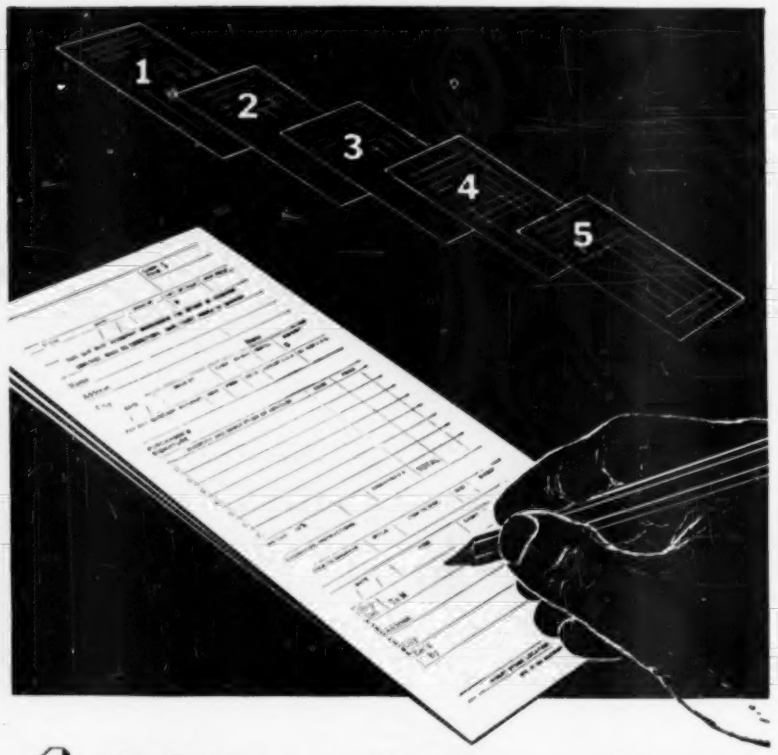

1 Baltimore Business Form takes the place of 5

Recently, a large retail chain had a costly problem. They handled five different types of sales, with five different forms, each of which had to be followed through multiple operations.

Management discussed their problem with Baltimore Business Form experts. Together they designed and produced one Form—readily adaptable to other types of stores—that could be used for *all* sales, and could be easily followed through all voucher processing. Result: Time and money saved in both selling and office operations.

WHAT'S YOUR PROBLEM? Since 1916, Baltimore Business Form's design and manufacturing experts have solved countless problems in serving over 60,000 of the nation's leading business houses. Their wealth of experience in *designing* forms to fill specific requirements ideally qualifies them to help you. Remember, often a single suggestion may save hundreds . . . even thousands . . . of dollars for your company. So, write us for help in solving your business forms problems.

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Fund drive begins for NYU business school building

A campaign for funds to finance a $3,000,000 development program for a new building to house New York University's Graduate School of Business Administration has been initiated, with John M. Schiff, of Kuhn Loeb & Co. as general chairman of the program.

The purpose of the campaign, according to Chancellor Henry T. Heald of NYU, will be to obtain financial support among members of New York City's business community for the construction of the school's new home in the Wall Street district.

Plans call for an eleven-story structure to be located on the block front just north of the school's present building at 90 Trinity Place. The site, bounded on the south by Thames Street and on the north by Cedar Street, is now owned by the university.

The new building is to be designed in contemporary style. It will provide classroom space for 5,000 students, a library with microfilm facilities and stack space for 75,000 volumes, an auditorium seating 450, dining facilities, offices, conference rooms, and research laboratories.

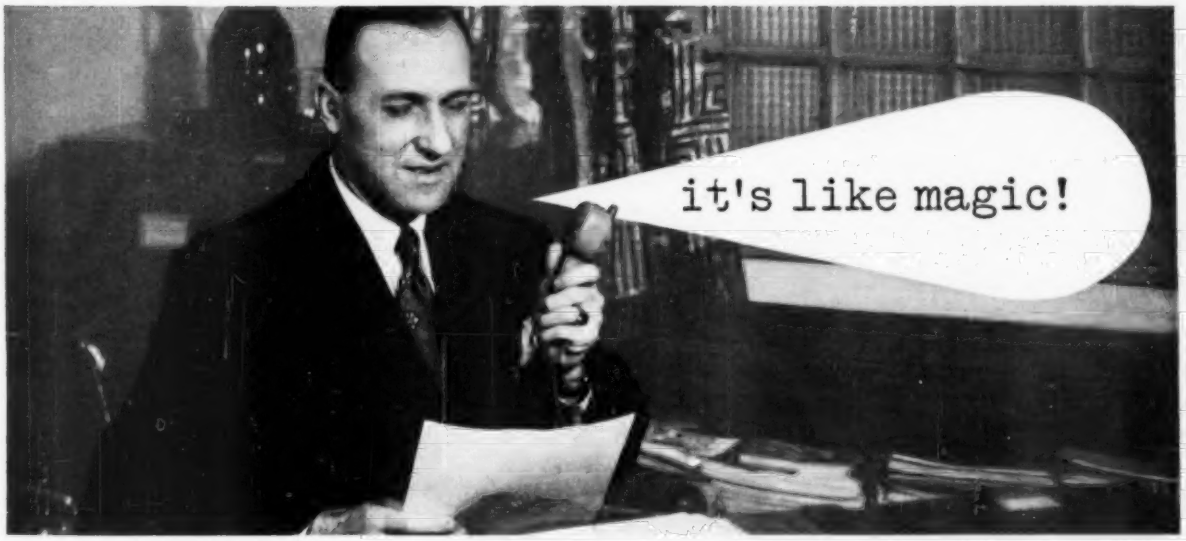
Color useful in office work, psychologist says

Many daily jobs can be made easier by the use of color, according to Dr. Daniel Brower, New York psychologist and director of psychological services for the New York Personnel Laboratory.

Colored pencil marks, he pointed out, can be helpful in many ways. He suggested that in the preparation of drafts, red checks can be used to indicate passages requiring attention, as for clarification, additions, or corrections. Once the necessary changes have been made, green checks could be used to signal "all clear."

In the routing of mail and other material, color coding can be used to identify various departments as a means of improving speed and efficiency, it was suggested, and on the executive's desk calendar important appointments can be marked in red, items to take home in green.

Dr. Brower made another point: don't underline. This practice not only takes time, he said, but it leads to eye strain and is a poor memory device. Instead, he suggested, use



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The EXECUTIVE SCRIBE has a range of accessories designed to satisfy the most discriminating executive. Whether you choose the unit with the miracle mike, the telephone hand set, or the executive station, we know that you will agree that Scribe is years ahead.

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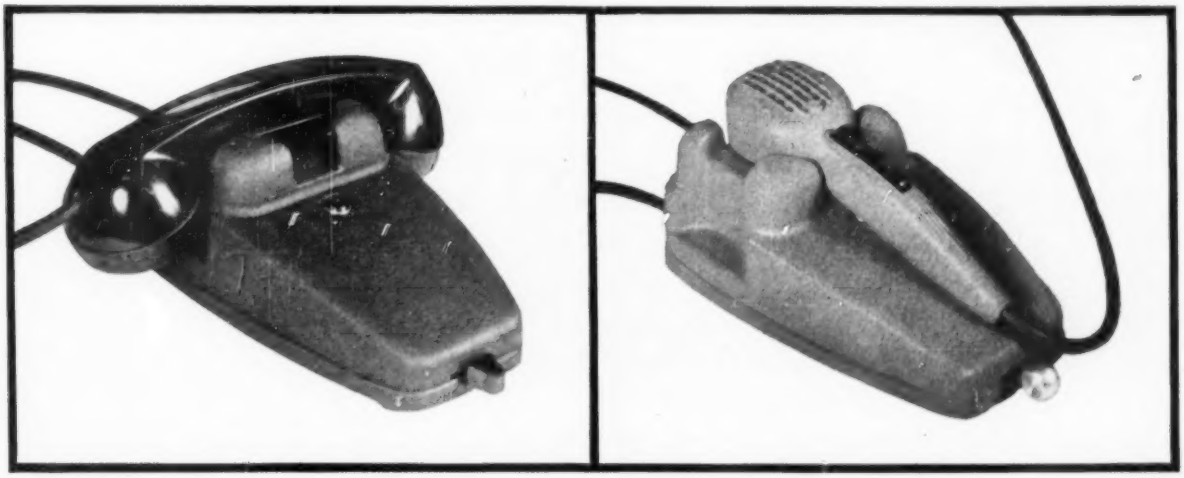
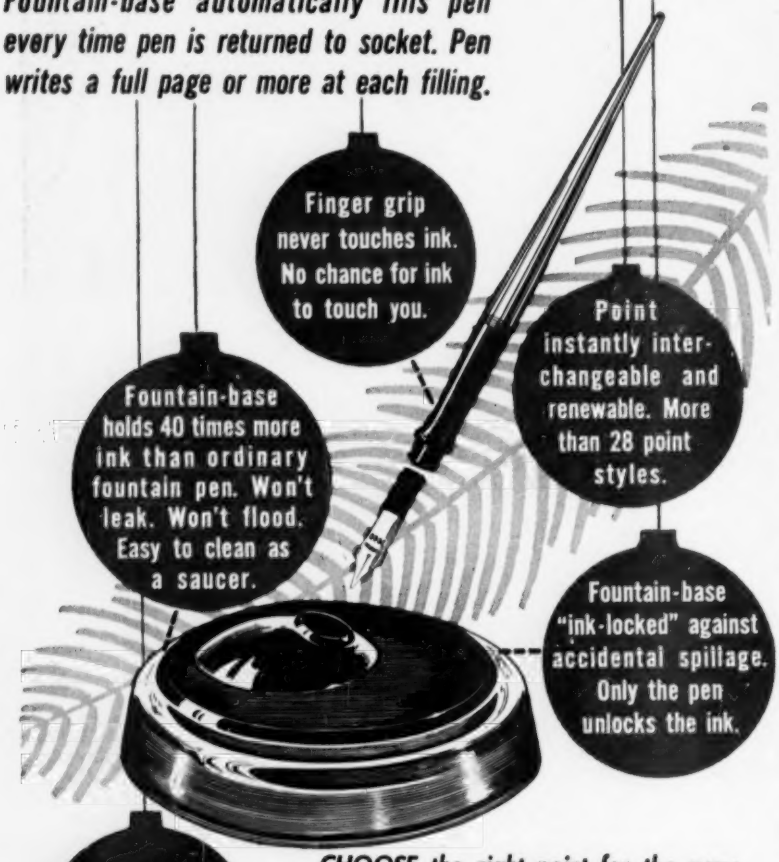
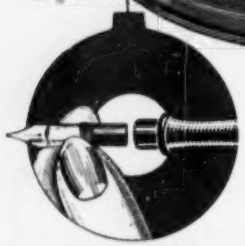


The pen that fills itself

The perfect gift for the desk writer

Fountain-base automatically fills pen every time pen is returned to socket. Pen writes a full page or more at each filling.


Finger grip never touches ink. No chance for ink to touch you.
Point instantly interchangeable and renewable. More than 28 point styles.
Fountain-base holds 40 times more ink than ordinary fountain pen. Won't leak. Won't flood. Easy to clean as a saucer.
Fountain-base "ink-locked" against accidental spillage. Only the pen unlocks the ink.



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marginal marks or circle an entire paragraph.

Dr. Brower made his remarks on the occasion of the introduction by the Norma Pencil Corp. of a new writing instrument which combines a pen, pencil, and colored leads.

Pittsburgh Reflector Co. in merger with Canadian firm

The Pittsburgh Reflector Co. of Pittsburgh, has merged with Holden Lighting Manufacturers Ltd., of Toronto, Canada, according to a recent announcement from Pittsburgh's president, H. C. Zinsmeister.

Mr. Zinsmeister stated that this move was made in order to strengthen the position of both companies in their particular marketing areas. The Pittsburgh Reflector Co. is one of the leading American manufacturers of fluorescent and incandescent lighting equipment for the commercial, industrial, and institutional markets. Holden is well known in Canada for its lighting equipment designed for use in offices, churches, restaurants, theaters, schools, and similar installations.

Both companies now expect that through an interchange of designs and production know-how they will be able to offer a much greater variety of lighting equipment.

The president of Holden is P. H. Greene; Ralph C. Johnson is vice president. J. C. Sullivan is executive vice president of Pittsburgh Reflector.

Association News

THE AMERICAN INSTITUTE OF ACCOUNTANTS has elected a new president. He is Maurice H. Stans, CPA, an executive partner of the accounting firm of Alexander Grant & Co. Mr. Stans has been vice president of the Institute and has served on numerous committees. He succeeds Arthur B. Foye, CPA, of New York. Also elected were the following vice presidents: Ira N. Frisbee, CPA, of Beverly Hills, Calif.; Alvin R. Jennings, CPA, of New York; John C. Martin, CPA, of Columbus, Ohio; and Virgil S. Tilly, CPA, of Tulsa. William M. Black, CPA, of New York, was re-elected treasurer. The election took place at the Institute's five-day annual meeting held this year in Los Angeles.

My number is L-1514 C.* I was one of the first members of a new family to go out into the business world. In shape and size I was a twin to millions of my predecessors but there the similarity ended. I was given a new finish called . . . leather-like.

MUCH was expected of me. Not only did I have to present a better appearance than my predecessors but of more importance I had to wear much longer—repel ink, perspiration, moisture, grease, oil, dirt and finger marks. In warm and humid climates I was forbidden to run off on clothing.

During the years of 1952, 1953 and the early part of 1954, I was in constant use during office hours. I was in and out of the files, on desks, under the arm, and occasionally in transit. I was handled by secretaries, salesmen and the boss. I contained correspondence, specifications, contracts (worth millions of dollars), instructional manuals and on one occasion on a rainy night in 1953 a secretary used me as a carrying case for some personal purchases. *I worked hard at a cost of less than 15c per year.*

I have recently been called back to Smead's laboratory to have my record of accomplishment checked. I was told that I passed with all my color.

I am TIRED yet PROUD.

Write us on your business stationery for a sample. Smead Manufacturing Co., Inc., Hastings, Minnesota; Logan, Ohio.

*The above file and date of usage may be seen in the Smead office.

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Bureau of Ships instruction books produced in *less time* at *lower costs* with XeroX® copying equipment . . .

U. S. Navy XFV-1
Official U. S. Navy Photograph

The U.S. Navy XFV-1 is one of the world's most versatile aircraft. Designed for vertical take-off, it combines the features of the helicopter, jet and propeller types.

Xerography is the world's most versatile copying process. It does in three minutes what formerly required hours. It helps speed the production of Bureau of Ships Instruction Books for the U.S. Navy in the Fourth Naval District Publications and Printing Office.

A report for a 31-month period indicates a saving of over $100,000 a year, using xerography instead of the former slower and costlier method.

Xerography is used by companies of all kinds, large and small, in thousands of applications copying forms, letters, charts, bulletins, sales manuals, engineering drawings, etc., onto paper masters for low cost duplicating. Anything written, typed, printed or drawn can be copied onto paper masters by xerography with XeroX® copying equipment.

For use in diazo type machines, translucent intermediates can be made from any original subject in the same speedy way.

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Association News

(Continued)

THE LIFE OFFICE MANAGEMENT ASSOCIATION elected officers for 1954/55 at its 31st Annual Conference, held recently at the Shoreham Hotel, Washington, D. C. Gerald L. Soelter, formerly first vice president, has moved up to the presidency. Mr. Soelter is secretary of Southwestern Life Insurance Co., Dallas. He is succeeded as first vice president by Warren J. Moore, vice president of The Old Line Life Insurance Co. of America, Milwaukee, formerly second vice president. J. Howard Ditman, vice-president and comptroller of New York Life Insurance Co., New York, was elected second vice president.

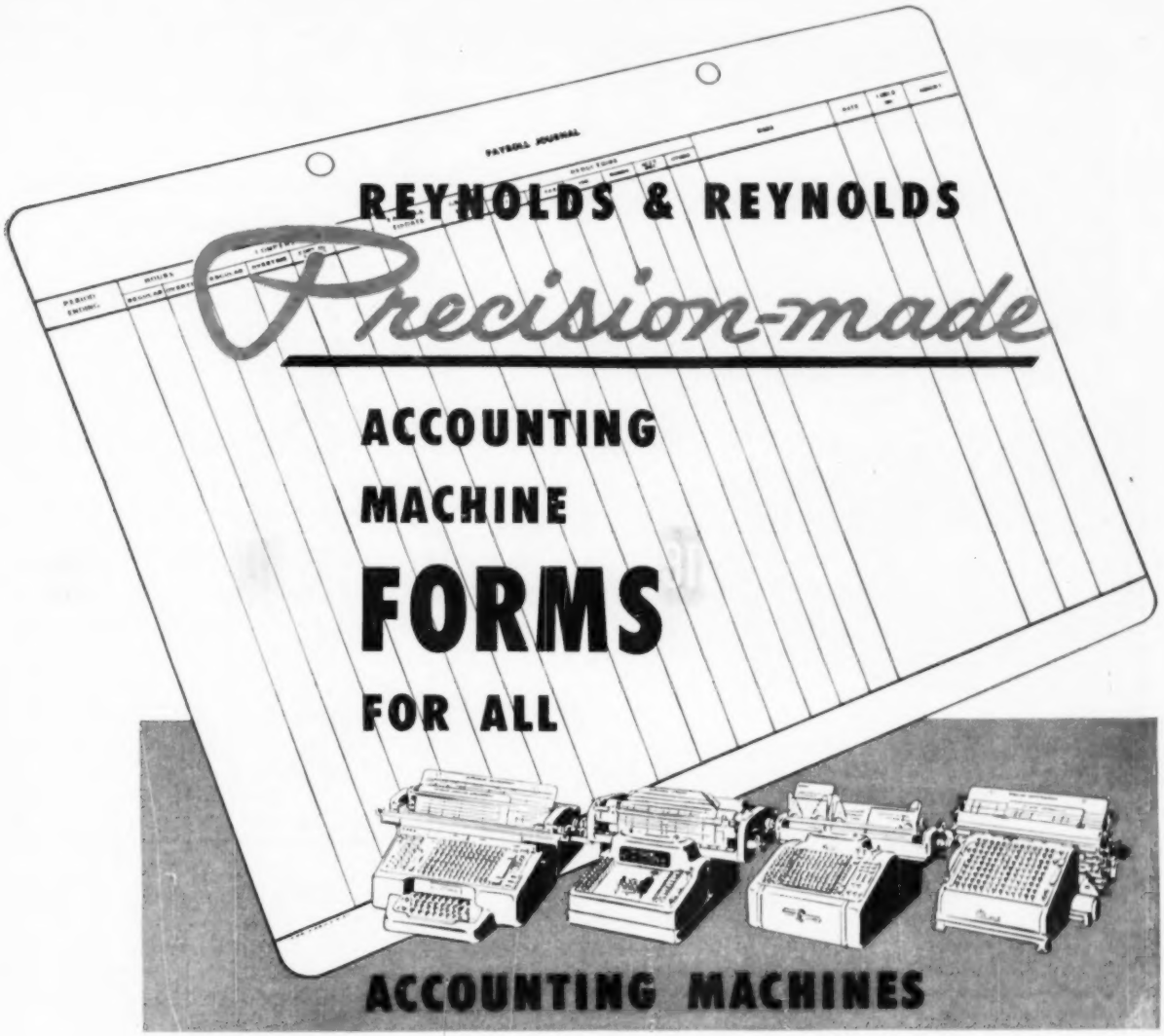
Three new members were elected to the board of dirctors. These are: Harry L. Archey, Jr., secretary, Fidelity Mutual Life Insurance Co., Philadelphia; C. A. Coleman, assistant secretary, Jefferson Standard Life Insurance Co., Greensboro, N. C.; and Hess T. Sears, assistant vice president, Equitable Life Insurance Co. of Iowa, Des Moines.

J. L. Batchler, vice president and secretary, Kansas City Life Insurance Co., remains on the board to fill the unexpired term of Harry H. Allen, retired second vice president and secretary of The Mutual Benefit Life Insurance Co., Newark, N. J. Noel S. Baker, immediate past president of LOMA, also continues as a member of the board of directors.

THE OFFICE EXECUTIVES ASSOCIATION of New York met for dinner on October 20 at the Hotel Belmont Plaza and heard a discussion on "Training for Office Supervision." The speaker was Robert H. Chope, office service manager, Detroit plant of the United States Rubber Co. Mr. Chope expressed the opinion that training of the individual office worker is of great importance and can make the difference between the success and failure of a business. He discussed various methods of training, together with comments on the advantages and disadvantages of each method.

At the luncheon meeting at the Masonic Club on November 3, OEA members listened to a program on the Association's recent salary survey.

(*To page* 55)



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with the NEW DIEBOLD
SUPER ELEVATOR FILE for mass-records

The new Diebold Super Elevator File breaks the record barrier with the same ease that jet planes now break the sonic barrier. Unproductive effort is the barrier that slows operations and increases costs of handling policy, premium, claim and other mass-records. Eliminating wasted effort is the Super Elevator File's specialty. It does the heavy work electrically . . . freeing operators for referring and posting. Operators remain seated . . . the file's electric brain brings any record to their fingertips . . . within 3 seconds . . . at the touch of a button! Short removable trays speed operations, permit instant division of work. The file houses greatest concentrations of records in smallest space . . . up to 300,000 in 17 square feet.

Let us show you how the Diebold Super Elevator File will improve mass-record handling and reduce overall costs. Ask to see case histories that show savings of one-third in time and space . . . savings that make it profitable to replace present equipment with electrically operated Super Elevator Files.

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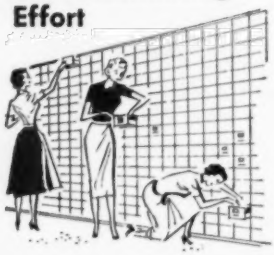

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Association News

(Continued)

Comments on the survey were made by Harlow J. Meckes, chairman of the Salary Survey Committee, and assistant personnel and office manager of Standard Brands Co. He was assisted by other speakers, who presented various aspects of the salary survey program.

THE OFFICE MANAGEMENT ASSOCIATION of Chicago held its first dinner meeting of the current season at the La Salle Hotel on October 21. The guest speaker was Adolph Berger, regional director of the United States Bureau of Labor Statistics, who spoke on "Government Information—Life Blood to Dynamic Business."

At the luncheon meeting held on November 4th at the Morrison Hotel, Serge A. Birn, president of the Serge A. Birn Co., discussed "M-T-M—a New Concept for Clerical Work Measurement." "M-T-M" is a reference to "Methods-Time-Measurement."

OMAC has also announced that Carmen A. Cerrone, office services manager for the A. B. Dick Co., has been elected to the Association's board of directors, succeeding Gerald M. Powell, of the Employers Mutual Liability Insurance Co., who has been transferred to Los Angeles.

The Association has announced the names of the latest winners of scholarship awards given under OMAC auspices. William G. Clark, Jr., of Chicago, won the membership business award, and Miss Norma Jean Schea, also of Chicago, won the school award. These awards, each of $100, are given each semester to an employed person and a student or recent graduate, to be applied toward tuition in a course in office management given by Professor Harry Wylie at Northwestern University.

THE ROTARY FORMS COUNCIL, a national educational and promotional organization devoted to improving business systems and office paperwork, held a three-day annual conference in Denver during September. The following officers were elected: president, Homer F. Woehrmyer, president of Woehrmyer Printing Co., of Denver; vice president, Walter Heer, of Heer

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Association News

(Continued)

Printing Co., Columbus, Ohio; treasurer, Philip Cornelius, of Cornelius Printing Co., Indianapolis; secretary, Vaughn Young, of Utah Banknote Co., Salt Lake City; and counsellor, T. S. Sullenberger, of Standard Printing Co., Amarillo, Tex.

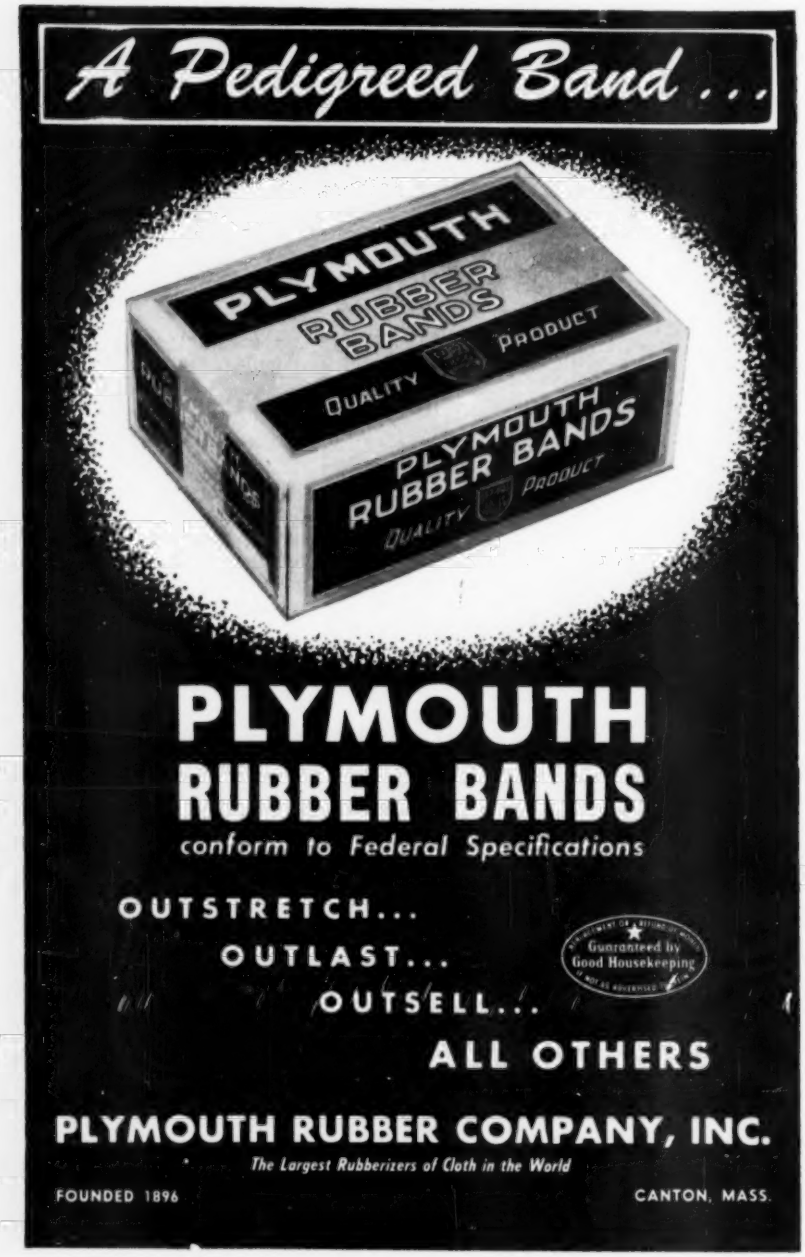
THE YORK, PA., CHAPTER of the National Office Management Association met at the Yorktowne Hotel on October 11th for dinner. The speaker of the evening was Roland C. Doles of the Standard Register Co., whose subject was "Work Simplification Through Integrated Data Processing."

THE RECORDS MANAGEMENT ASSOCIATION of New York met on October 11 and again on November 8, at 3 W. 51st St. The speaker at the October meeting was William T. Hamlen, of International Business Machines Corp. The November speaker was Alfred MacDonald, of Recordak Corp., who discussed "Microfilming and the Retention Program."

RMA members planned a field trip to the Metropolitan Life Insurance Co.'s Hall of Records at Bronxville, N. Y., during November.

THE ROCKFORD, ILL., CHAPTER of the National Office Management Association sponsored an all-day Management Seminar in Rockford on November 4. The seminar was conducted in cooperation with the University of Illinois School of Business Administration. T. J. Manzke, office manager for the Pure Oil Co. and a past president of the Office Management Association of Chicago, spoke on "Meeting the Needs of Personnel." Alvin J. Vosskuhler, industrial relations manager for International Harvester Co., and second vice president of OMAC, spoke on "Dynamic Leadership."

THE TRANSCRIPTION SUPERVISORS' ASSOCIATION of New York held monthly meetings at Whyte's Restaurant on October 11 and November 8. The program at the October meeting was devoted to "Methods—Work Simplification." On November 8, James M. Brahney, assistant manager of the office services division, General Foods Corp., White Plains, discussed "Duplicating Methods."



Books and Pamphlets

The Management Consulting Profession

A brochure called *How the Management Consulting Profession Serves American Business* has been prepared by the Association of Consulting Management Engineers, Inc. "to meet the increasing need for information on how management consultants fit into the business picture, how their services are rendered, and how they can best benefit the employer of these services." Its chapters are entitled: "The New Management," "Appraising the Need," "Serving the Need," "Selecting a Consultant," and "Securing Best Results." The Association's Code of Ethics is also printed.

The Association has also prepared a list of its members. Both booklets are available by writing the Association of Consulting Management Engineers, Inc., 347 Madison Ave., New York.

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You have no investment, no inventory, no maintenance. Everything is furnished and serviced by your linen supplier, at low cost. Dependable delivery and pick-up maintain a continuous supply of your exact linen requirements—large or small. Local service is listed in your classified directory under LINEN SUPPLY or TOWEL SERVICE. Call today or write to address below for free descriptive booklet.

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In any business . . . Linen Supply is Good Business

Books and Pamphlets
(*Continued*)

Office Machines

The Committee on Special Projects of the American Association of Collegiate Registrars and Admissions Officers has published a book containing 91 pages of information on various types of office machine equipment. The following categories are surveyed: correspondence equipment (including dictating machines, folding machines, automatic typewriters, and letter openers), duplicating equipment, identification equipment, microfilm equipment, photocopying equipment, and punched card equipment.

Although the book is written primarily for college registrars and admissions officers, a comment in the introduction points out that the use of machine equipment in college offices is "no different in many respects from the use of such office machines in any office."

The book is entitled *Machine Equipment for Efficient Office Operation* and is available at a price of one dollar from Nelson M. Parkhurst, Associate Registrar, Purdue University, Lafayette, Ind.

Records Management

An article on records management, which originally appeared in the September-October, 1954, issue of the *Harvard Business Review*, has been reprinted. It is entitled *The New Science of Record Management* and is the work of Robert A. Shiff and Arthur Barcan.

The article takes as a departure point the following statement: "A plant engineer would be pained if a nut were screwed on by one operator on the line, then loosened and screwed on again by two more operators. Yet this sort of duplication is common in paper-work processing."

The authors state that the science of records management covers three phases: (1) records "birth control," (2) record-keeping controls, and (3) record-processing controls. Their article discusses the importance of good records management, examines the place of the specialist in assisting a company to solve its records problems, studies the relative merits of various types of specialized equipment in reducing records storage, etc. Various tables, and exhibits are included for illustrative purposes.

The reprint is available from the *Harvard Business Review*, Soldiers Field, Boston.

Printing Costs

An easy-to-use guide for estimating the costs of letterpress and offset printing jobs has been prepared for the convenience of office executives by Regina Services Corp., 847 Lexington Ave., Brooklyn, N. Y. The guide is in the form of a 16-page booklet which includes tables giving printing costs tabulated according to size of page, quantity, and whether material is to be printed on one or two sides.

Additional information is provided on costs for other-than-standard papers, colored inks, bookkeeping, collating, perforating, saddle stitching, numbering, stapling, padding, and punching. Costs are also shown for offset platemaking, envelope imprinting, etc. The booklet, called "Your Printing Costs Are As Follows . . ." is available without charge from the company at the above address.

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YOU NEED THIS
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PAPER CUTTERS:
11 models — 7 sizes . . . from lever cutters in bench and floor models — to power cutters with hand or hydraulic clamp. Engineered to provide smooth, accurate cutting with minimum effort and maximum safety.
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For standard run of loose-leaf work. Also adaptable for variety of novelty jobs. 9 styles available — hand, foot, power models.
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Available in 7 smart colors, MAK-UR-OWN tab strips can be *custom-cut* to suit *any* indexing job you have. Take this short cut... the MAK-UR-OWN short cut... to handy, economical indexing.

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VICTOR SAFE & EQUIPMENT — **Remington Rand Inc.** DEALER SALES DIVISION

315 FOURTH AVENUE · NEW YORK 10, N. Y.

Books and Pamphlets
(Continued)

Purchase Law Manual

Conover-Mast Publications, Inc., 205 E. 42nd St., New York, has published a 400-page *Purchase Law Manual*, priced at $6. It includes information on such subjects as the statute of frauds, verbal contracts, rights of inspection, limitation of damages, rights to rescind, the validity of check notations, unacknowledged orders, unsatisfactory deliveries, stoppage in transit, and other phases of contract law.

Also will be found an analysis of agency law, including bailments, consignments, options, offers to sell or buy, conditional sales contracts, the law of warranty, title to goods, fraud, the law of patents, and arbitration vs. litigation.

Other subjects include standardized contract forms, the Uniform Sales Act, implied contracts, illegal contracts, price fluctuations, the legal authority of the purchasing agent, the personal liability of the purchasing agent, and the law of warehouse receipts.

The book provides information on how to handle disputes regarding f.o.b. shipments, how to protect the company in conditional sales contracts, how to determine when the company assumes legal obligation, how a company may protect itself against price fluctuations, how to substitute arbitration for litigation, and other subjects.

The New Tax Law

Two more analyses of the new tax law are now available. These are:

What to Do About the Eisenhower Tax Law, a special staff study prepared in connection with *The J. K. Lasser Tax Report* series and published by Business Reports, Inc., 1 Main St., Roslyn, L. I., N. Y. This is a 14-page pamphlet summarizing many of the principal provisions of the new law. Omitted from this report but scheduled for coverage in subsequent reports are the provisions on partnership, accounting, pay and employment, trust, and estate and gift taxes.

A special tax issue of the *Journal of Accountancy*, which contains a series of studies by twelve well-known CPA's. Single copies of the issue are available from the *Journal of Accountancy*, 270 Madison Ave., New York.

Integrating the Office for Electronics

Last February, the American Management Association conducted a two-day conference devoted to the installation of automatic office equipment in the offices of the United States Steel Co. in Pittsburgh. This equipment was interconnected through the "common language" of five-channel punched paper tape. The lectures at this conference were illustrated by closed-circuit telecasts showing similar equipment in operation. AMA has now made the highlights of this conference available as a motion picture film, edited and provided with a spoken commentary.

This film, together with a kit providing suggestions on how to conduct a conference on integrating the office for electronics, is now available on a rental basis. Information may be obtained from the American Management Association, 330 W. 42nd St., York.

List of Special Days, Weeks, and Months

The U. S. Chamber of Commerce, 1615 H St. Northwest, Washington, has published the 1955 edition of *Special Days, Weeks, and Months*. It is available at a single copy price of 25 cents.

Static electricity . . . unevenly cut sheets . . . torn sheets in the ream — those are the three gremlins that often cause your duplicating machines to "run wild".

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People in the News

ROBERT A. SHIFF has been elected president of the National Records Management Council, Inc., non-profit organization devoted to the preservation of business records and the effective control of all paperwork operations, according to an announcement from Arthur H. Cole, chairman of the board. Mr. Shiff formerly was executive director for the Council. He is actively engaged in the training and education of individuals for responsible positions in the field and is currently giving a course at New York University, where he is Adjunct Professor of Records Management and Archives Administration.

©Fabian Bachrach
Robert A. Shiff

ERIC Q. BOHLIN, vice president in charge of production for the Eberhard Faber Pencil Co., celebrated his twenty-fifth anniversary with the company on September 30th. Mr. Bohlin joined the company in 1929 in merchandising, subsequently advancing to the superintendent's office. He became assistant superintendent in 1940, and in 1949 he was made general superintendent and assistant secretary of the company. He assumed his vice presidential position in 1950 and was made a director of the company in 1953.

CARL R. MILLIN has been appointed manager of W & J Sloane's Washington Contract Department. Mr. Millin has been with the company's New York Contract Division since 1939, where his most recent position was that of sales promotion manager. At the same time, *Holmes Ely* was made manager of the company's Beverly Hills Contract Department, moving to his new post from a position as member of the sales staff in the New York Contract Division.

RANDALL H. DECKER, JR. has been named eastern representative covering the eastern territory for the Gilbert Paper Co., of Menasha, Wis. Mr. Decker was formerly with the Schuylkill Paper Co., of Philadelphia, as manager of its Wilmington branch.

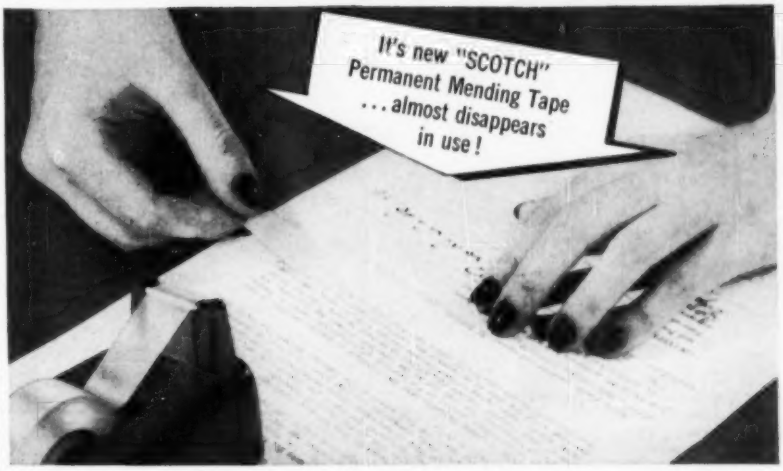
D. H. HICKEY has been elected treasurer and controller of The SoundScriber Corp., New Haven, Conn., manufacturers of dictating and recording equipment, according to a recent announcement from President Walter J. Niles.

Mr. Hickey has been associated with SoundScriber since 1947, in both sales and financial activities. Previously he was connected with General Electric Co., U. S. Rubber Co., Colt's Patent Firearms Co., and Crystal Research Laboratories, in fiscal, methods, and office management capacities. He is a past president of the Hartford chapter of the National Office Management Association.

ROBERT D. HOWSE has been elected president of the Waterman Pen Co., Inc., succeeding *Frank D. Waterman*, grandnephew of the founder of the company. Mr. Waterman was elected chairman of the board. Mr. Howe's appointment coincides with the 70th anniversary of the company.

FRANK R. DELLITT has been promoted to the position of sales manager of the Underwood Corp.'s dealer division, according to a recent announcement from Vice President W. F. Arnold. Mr. Dellitt has been with Underwood since 1937, having successively held the positions of clerk, office manager, typewriter salesman, and port-

INVISIBLE TAPE?



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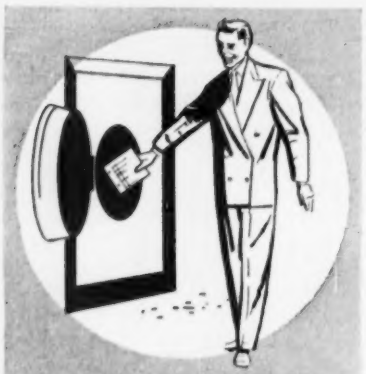
3M



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People in the News

(Continued)

able typewriter representative to dealers, all of these posts being held in Dallas.

THE MINNESOTA MINING & MFG. CO. has announced several recent promotions:

Robert A. McGinnis has been elected vice president and general manager of the American Lava Corp., a 3M subsidiary. He will succeed *John Kruesi*, who has resigned to devote more time to his farming activities and other outside interests; Mr. Kruesi had been president since 1948. Mr. McGinnis has been associated with the parent company for 21 years, during which he has had wide experience in the fields of manufacturing, research, and sales. In 1946 he became active in 3M's overseas operations, and since 1951 he has been manufacturing manager of the international division.

Donald P. Selleck has been named assistant controller of 3M. Mr. Selleck has been with the company since 1941, when he joined it as a cost accountant. Later he became supervisor of cost estimating, and in 1949 he was made office manager of the company's plant at Bristol, Pa. Since 1951 he has been division controller. In his new position he will be responsible for the operation of the company's cost accounting department and will coordinate the activities of the division controllers.

William R. Chamberlain has moved to the position of chief cost accountant. Mr. Chamberlain has been with 3M since 1944. Prior to his most recent advancement he was a division accountant.

Roy J. Mordaunt has been made division controller of staff services. He moves to this position from that of division accountant of the research and product development group. He has been with the company since 1948.

LIONEL G. DAVIDSON, Certified Public Accountant, has been appointed assistant auditor for Jones & Laughlin Steel Corp., of Pittsburgh. Mr. Davidson moves to this position from that of senior auditor for Price Waterhouse & Co. From 1933 to 1942 he was employed by Samuel S. Stewart & Co., and during World War II he served in the Navy.

...if only for THEIR sakes

...learn how to protect yourself from death from cancer. They need *you!*

And for your sake and theirs you must keep on remembering that the best cancer "insurance" is:

FIRST... *to make a habit of periodic health check-ups no matter how well you may feel, always including a thorough examination of the skin, mouth, lungs and rectum and (for women) the breasts and generative tract.*

SECOND... *to learn the seven danger signals that may mean cancer, and go straight to the doctor at the first sign of any one of them—(1) Any sore that does not heal (2) A lump or thickening, in the breast or elsewhere (3) Unusual bleeding or discharge (4) Any change in a wart or mole (5) Persistent indigestion or difficulty in swallowing (6) Persistent hoarseness or cough (7) Any change in normal bowel habits.*

For other life saving facts about cancer, phone the American Cancer Society office nearest you, or address your letter to "Cancer"—in care of your local Post Office.

American Cancer Society

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People in the News
(Continued)

Frank R. Graham has been appointed assistant chief accountant for mill accounting at the company's Aliquippa Works. In this post he will be responsible for accounting functions performed in the various mill units of the Works, including basic development of production records, payroll records, incentive records, budgets, and other matters. Mr. Graham has been with the company since 1948.

ALFRED O. P. LEUBERT, secretary and controller, Old Town Corp., Brooklyn, N. Y., has been elected to membership in the Controllers Institute of America.

WINSLOW AMES has been appointed director of personnel for the Reeves Instrument Corp., according to a recent announcement from the company president, David T. Bonner. Mr. Ames has been assistant director of personnel at Reeves for the last three years and was previously personnel manager for Kentile, Inc. He succeeds *Vincent Gillen*, who resigned to accept appointment as professor of management and as director of personnel at Hofstra College.

O. O. SCHREIBER, assistant to the president of Philco Corp. during the last four years, has been made a vice president of the company, according to an announcement from the office of President James H. Carmine. Mr. Schreiber will continue to handle special assignments for the president and chairman of the board and will act as secretary to the Policy and Management Operations Committees, and as chairman of the Coordinating Committee of Philco Distributors, Inc.

The new vice president joined Philco in 1931 as a partner in the Philco wholesale distributing company in Louisville, Ky. In 1933 he was named controller of Philco Distributors, Inc., and two years later he became general manager of the San Francisco distribution organization. He was appointed assistant treasurer of Philco Corp in 1936. In 1945 he was named manager of operations planning, and in 1949 he was made assistant secretary, moving up the following year to the post of assistant to the president.

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10. When copies of original work sheets are suitable for distribution.
11. When you need copies of sketches, news items, etc.
12. When an original is confidential.
13. When a central copying service cannot give you fast enough service.
14. When you want to end costly retyping, proofreading on *any* job.

Free demonstration in your office. No obligation.

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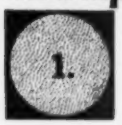

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EVERLASTING
Interchangeable
ORGANIZATION CHART

EASY TO CHANGE

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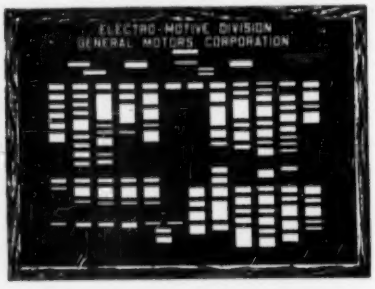

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People in the News
(Continued)

ROBERT HOWARD has been appointed manager of the Vic-Dar Division, the new electronic data accumulation and reduction system manufactured by the Victor Adding Machine Co., it has been announced by Vice President A. C. Buehler, Jr. Mr. Howard has had extensive engineering and production administration experience with RCA and as manager of the Government Division of Webster-Chicago Corp.

CHARLES N. HELBERT has been promoted to the position of personnel manager for the National Gypsum Co., of Buffalo, N. Y. Mr. Helbert, a graduate of Syracuse University, formerly was assistant to the personnel manager. Prior to joining National Gypsum in 1951, he had been supervisor of personnel testing at Ansco, a division of General Aniline & Film Corp., and employment manager at John B. Stetson Co. and American Machine & Foundry.

A. B. Dick, Jr., dies

Albert Blake Dick, Jr., chairman of the board of the A. B. Dick Co., died on October 24th at the age of 60, in Lake Forest, Ill., following a prolonged illness.

Mr. Dick was president of the A. B. Dick Co., from 1919 to 1934. In 1934 he was named treasurer, serving in that capacity until 1947, at which time he became chairman of the board.

In addition to his long association with the Dick Co., he was a director of the Northern Trust Co., the First National Bank of Lake Forest, the Commonwealth Edison Co., and Marshall Field & Co.

He had also served as mayor of Lake Forest, and as a member of the Presbyterian and Lake Forest hospital boards. He was also active on the boards of the Markle Foundation of New York City and the Chicago Natural History Museum.

Mr. Dick is survived by his wife, Helen Aldrich Dick; a son, Albert Blake Dick III; a daughter, Mrs. Helen Dick Bronson; a sister, Mrs. Thomas W. Swan, of New Haven, Conn.; two brothers, C. Mathews, of Newport, R. I., and Edison, of Lake Forest; and six grandchildren.

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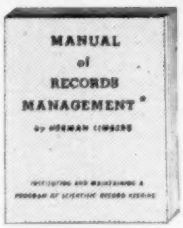

FREE MANUAL
This factual "HOW TO", written by Dr. Herman Limberg, the eminent records management consultant, will prove an invaluable help in instituting and maintaining a program of scientific record keeping.

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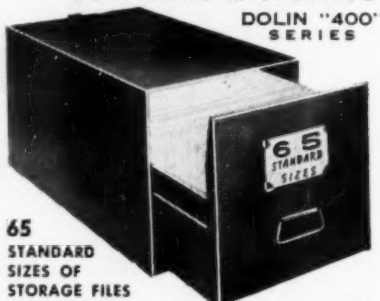

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It is within man's power to eradicate tuberculosis—when you buy Christmas Seals to support your tuberculosis association you help to make this possible.

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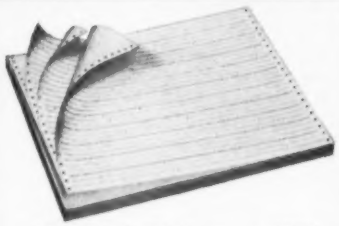

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PHILIP Hano Company Inc.

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Telecomputing Corp. opens Los Angeles office

The Telecomputing Corp., of Burbank, Calif., manufacturer of electronic recording and computing equipment for business, science, and industry, has established Marketing Division offices in downtown Los Angeles.

The offices, at 1054 Wilshire Boulevard, will be the base of operations for H. G. Ayers, vice president in charge of the division, and T. O. ("Ted") Mikolasy, regional sales manager for the eleven western states. Advertising, sales promotion, and systems engineering will also be handled here.

The opening of the office is part of the growth of the company to meet demands for its new Point O' Sale equipment. Other expansion plans include a manufacturing plant in North Hollywood, Calif., and additional sales offices in eastern, central, and southern states.

New consulting organization to advise on electronics

A new consulting firm has been organized for the purposes of providing consultant services to management on the use of computers and other electronic data processing equipment. The firm is known as Canning, Sisson & Associates, and is located at 914 S. Robertson Blvd., Los Angeles.

The principal members of the new organization are Richard G. Canning, formerly a data system engineer with the University of California at Los Angeles and Roger L. Sisson, who until recent., was manager of the customer service department of the Electronics Division (formerly the Computer Research Corp.) of The National Cash Register Co.

J. E. Bertsche, Todd Co., dies

John E. Bertsche, Jr., director of purchases for the Todd Co., Inc., of Rochester, N. Y., died on November 8th at his home. He was 47.

Mr. Bertsche had been associated with Todd since 1934, when he joined the company as secretary to Walter L. Todd, now chairman of the board. In 1945, he transferred to purchasing as administrative assistant to the director, and in August, 1950, he became director of purchases. He served in the Navy from November, 1942 to November, 1945.

He is survived by his wife, a stepson, a daughter, and two brothers.

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ALCOA—

(*From page* 32)

"Progress is only made by first evaluating effects of a system and procedures improvement logically, then moving on to it and getting it done. No one can predict every effect in advance. If the basic theory of the improvement is accepted, then a margin for error must be accepted. If the premises are correct, then the conclusion must be correct. Furthermore, the intangible benefits of the improvement, though they may be hard to evaluate mathematically, can far outweigh the cost savings."

Using that statement as a standard, how does the ALCOA revision of its sales orders procedure stand up?

The overall premises of the improvement, as stated in the original letter proposing the revisions, were that it would reduce clerical time spent in typing, checking, and duplicating sales orders in the originating sales offices; that it would move sales orders to any given plant within twenty-four hours; that it would lessen errors in information on sales orders; that it would reduce clerical work at all subsequent stages beyond the sales office; and that it would improve the service to customers.

Nothing more specific than that was promised, and even the savings projected under the system were estimates only. It was stressed that every step proposed in the system was, however, based on existing equipment, and that no method employed within the system was experimental—each was already in use, somewhere.

The letter proposal from ALCOA's Administrative Procedure Committee was accepted by the company's top management, and the Committee moved to put its proposals into effect. The Committee Staff was enlarged, and committee members moved out in the field to meet with departmental, works, and sales management, and work out with them their needs and requirements under the proposed system. In Pittsburgh, meanwhile, a "proving ground" was established in the committee's offices. There every method of writing or reproduction of records outlined in the original letter proposal was represented by one or more machine units provided to service the experimental station. Whenever a suggested form or procedure was outlined, it was possible to feed it through this pilot installation, measure times required to complete it, and so have a valid basis of comparison for the particular form or procedure as against others suggested.

Thus, it was possible for the committee, which began work with broad overall principles for speeding and simplifying the Sales Order procedure, to work out all details so that when the procedure was finally instituted in the summer of this year it represented the best thinking and judgment of people throughout the company. Every form used, every procedure followed had already been tested.

The basic results promised by the new system have been more than realized. The private line teletype network has been expanded from a total of 9,000 miles to more than 20,000 miles, and obviously the investment in new equipment has been heavy. But, conversely, the savings in time and clerical work achieved by the system will increase as time goes on, and these direct savings will offset costs of installation.

The ALCOA system, in other words, is a success in every way. It does not represent the ultimate in integrated data processing, nor was it intended to. It does represent a system which can be further developed; the groundwork for the future has been laid. Many more activities can be geared into the system: installation of electronic computing equipment at Pittsburgh could make possible even faster sales statistical analyses. The new system has been designed so that it will be perfectly consistent with further development of automation in accounting, production control and all related fields.

ALCOA, in other words has chosen to take a middle way—to take a long stride ahead by revising one entire area of operations, and doing it completely, rather than attempting to change over all areas to automation at one leap. What it has accomplished in this successful first step reveals no great new principles, but it illustrates again what can be accomplished by carefully planned application of principles already known.

ALCOA is maintaining its position in the front rank of American industry by adhering to a doctrine long acknowl-

(*To page* 68)

DON'T LOSE YOUR TEMPER, YOUNG LADY!
-it's not necessary to FUMBLE with Old Fashioned Rubber Bands!
ASK YOUR STATIONERY DEALER TO SUPPLY YOU WITH THE MODERN.
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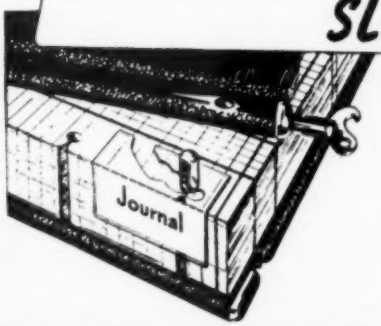

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(*From page 66*)

edged in every successful factory taking advantage of new processes, new machines as they come along, even though it is known that further improvements may be available some time in the future. When the improvement comes, the company that has taken the intermediate step will not only have had the benefits given by that step; it will be in a better position to incorporate the new devices into its system than companies that have postponed any revisions.

Switchboard—

(*From page 23*)

Items 8 to 13 covering the "allowances" for extra activity we shall endeavor to eliminate. For this reason we shall not consider them for the the purposes of the study.

While no holding time factors are involved in the study, it is important to establish the Busy Hour load so that requirements can be estimated on the basis of providing a good grade of service at all times. Reading of the counters should be taken every hour so as to determine the Busy Hour load.

To determine the load in terms of work units we shall multiply the number of calls in each category by the coefficient assigned to each item.

Let us assume that the reading of the counters in the Busy Hour showed the following volume in each classification:

Extension to Extension	250 calls
Incoming to Extension	150 "
Outgoing to Manual Central Office	150 "
AB Toll calls	60 "
Long Distance calls	10 "
Assistance calls	10 "

To determine the load in terms of work units by the process indicated above:

No. of Calls	Coefficient	Work Units
250	.90	225.00
150	1.10	165.00
150	1.10	165.00
60	2.50	150.00
10	10.00	100.00
10	3.00	30.00
Total Work Units		835.00

As a result of many years of study, it has been determined that operators can handle hourly work loads according to the number of operators "in team." Attention is directed to the bottom of the Tables of Coefficients by which the basic Busy Hour loads have been established. It will be noted that as the number of operators "in team" increases, the greater load can be handled by each. This is due to the greater teamwork and overlapping technique whereby each operator helps to carry the load. In other words, when an operator has a temporary lull on her own position she may pick up calls indicated on other positions where the load is heavier at the moment; the greater the number of operators available for such teamwork, the greater becomes the availability work load of each operator. On a single position where there is only one attendant, no teamwork factor is involved and it has been determined that attendant can handle only 150 work units per hour. If there are two

operators (attendants) in team, the work unit availability for each increases to 200 units per hour. Three operators in team produce 220 work units per hour, etc. Each work unit is estimated to be equivalent to 15 seconds in time.

Now let us determine if three operators can handle a load involving 835 work units. The table shows that three attendants in team each can handle 220 units per hour, or 660 total work units. This represents a deficiency of 175 work units. Four operators in team each can handle 225 units per hour, or a total of 900 work units. From these conclusions it would appear that a four-position PBX and four operators would be required to handle the busy hour load. This does not necessarily mean that four full-time operators are required. The average Busy Hour load will require no more than three operators. It is deemed wise to provide a fourth position as a safety factor with a schedule of work that will require a fourth operator only during peak load periods on several occasions daily—for the Busy Hour factor of 835 work units. If the Busy Hour load indicates a theoretical position requirement of 3.3 or 3.4, and in order to provide a good grade of service during the Busy Hour periods, a fourth person is needed, and a fourth operator in the same proportion of time as the factor to the right of the decimal point would indicate.

It has further been determined that regardless of the number of operative positions, or the number of operators in team, at no time is an operator capable of producing more than 245 work units per hour. In large installations where the work unit load is quite heavy, position requirements are determined by the same method as shown above, or to reverse the procedure, we may divide the total work load by the factor 245. For example, if the total work load were 3,500 units, the theoretical position requirement would be approximately 14.3, in which case 15 positions (actual) would be needed.

It is worthy of special note that in the hypothetical traffic load used for the purpose of establishing PBX position requirements, no extra-curricular activities have been involved. If some of the ill-advised techniques are practiced, such as extensions hanging up before calls are completed, or unnecessary ticket work, or obtaining time and charges on toll and long distance calls, or reference to directories, etc., thereby requiring extra time on the part of the operator, coefficients representing such activities must be added. This will increase the numbers of work load units, and will obviously increase the position requirements.

In the case of a dial switchboard, two separate studies are required, one to determine the number of PBX positions needed to handle the traffic over the manual switchboard, and the other to determine the number of calls which will be routed over the mechanical switches. When a manual telephone system is to be converted to dial operation, the prime objective should be to divert as much traffic to the mechanical apparatus as possible. Many companies convert to dial without giving sufficient thought to this important question. The author has encountered such installations in which 80 per cent or 90 per cent of the extensions were restricted from making outside calls. The paradox lies in the fact that before conversion *any* extension could make an outside call merely by asking the operator for a trunk line. There is usually a false sense of security resulting from the fact that when such calls are "passed" through the operator, there is thought to be some control, but such is not the case. Whenever an extension is connected to a trunk he can place any type of call he wishes.

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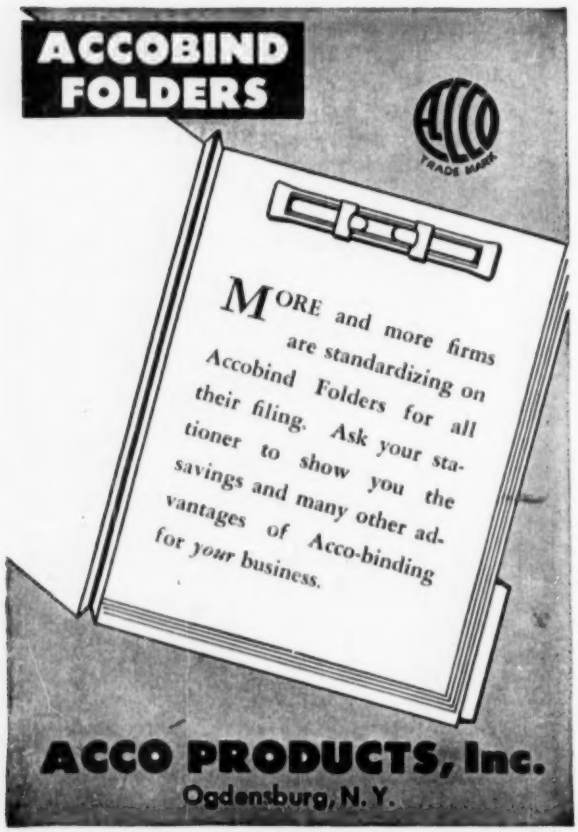
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It has been stated that the operator can watch the "flicker" of the supervisory lamp and can determine if the extension is dialing a local call or if he dials "Operator" after having been connected with trunk. If she determines that it is a local call by the number of times the light "flickers" it goes unchallenged, but if she thinks he is attempting to make a toll call, she can question it.

In the first place, she is usually too busy to "monitor" such calls. In the second place, more and more cities are providing "Toll Diversion" service for dial installations so that if an extension dials the code for reaching a central office trunk, and then dials "O" or the long distance code, after having dialed to reach the central office trunk, the call will revert automatically to the PBX where it is challenged. In other words, this is a foolproof method for preventing anyone from making a toll or long distance call without the knowledge of the operators. In small localities where the "Toll Diversion" feature is not available, arrangements can usually be made with the local telephone company for their operators to refuse any call from anyone except the PBX operator.

The fear of abuses being made of direct dialing facilities is a fast fading theory. In the great majority of cases, it just does not exist. To be sure, there are some employees who will "cheat" regardless of what restrictions are provided. If it does not pertain to telephone calls, it will occur in some other activity. But why stymie a whole system because of a handful of such persons? With few exceptions, every dial system should provide for 85 per cent or 90 per cent unrestricted extensions. If the rank and file are told that these direct dialing facilities are being provided to increase the overall efficiency of the service, and if an appeal is made to avoid any abuse of such facilities, by far the great majority will react favorably. The author could recite one case history after another in which the local call rate has increased less than 10 per cent, and the illicit toll calls are nil. These were cases in which it was stated "our people are different, they will take advantage of the direct dialing facilities and abuse the privilege." This is a bogie man which has no reality in fact. Everyone thinks his people are "different." For the most part, people are fundamentally honest. Surely, you have read in the press about a certain bank in New York State that installed a system by which anyone could make his own change by merely extracting it from racks provided for that purpose, and the results have shown that very few discrepancies have resulted. They believed that most people are honest and the people they refer to are not employed by the bank. Employees are less apt to cheat those who employ them than transients who use the facilities of a bank. The following tabulation was made by a large company in an Eastern city. It covers a period of nineteen months, during half of which company telephone facilities were on a manual basis while the balance was on a dial basis.

Month	Business Days	Long Dist.	Local	10c	15c	20c
March	23	$7,229	34,324	395	356	380
April	22	6,298	34,216	425	370	381
May	20	6,094	33,733	384	294	385
June	22	6,225	36,855	385	389	388
July	21	5,995	32,917	324	335	331
August	22	5,318	33,476	340	339	371
September	21	5,963	34,660	309	296	395
October	20	4,904	34,103	335	312	352
November	19	5,605	35,930	333	343	405

(*To page* 73)

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(*From page 70*)

December	23	6,759	41,053	441	425	544
January	21	5,739	36,854	382	364	412
February	19	5,577	33,668	353	295	369
March	23	7,301	40,809	402	362	426
April	21	6,322	37,836	368	320	386
May	21	5,736	36,982	369	330	429
June	22	7,197	38,805	393	355	448
July	20	6,083	33,924	364	338	423
August	23	6,371	40,164	377	316	475
September	21	6,339	37,654	474	360	429

Note the consistency with which calls in all categories are made. This installation comprises 800 extension stations and is 90 per cent *unrestricted*. The proof of this lies in the fact that the theoretical position requirement is only 3.4 in the busy hour (on a dial basis). A lesser ratio of unrestricted stations would require a greater number of positions.

The approach to determining the PBX position requirement on a dial basis is the same as it is on a manual basis. At the conclusion of the traffic study the load is divided as indicated previously. All traffic that the operators are required to handle, such as Incoming calls, Outgoing toll and long distance, and assistance calls, carry the coefficients assigned to each category, and the total number of work units are determined. From this we know what the position requirement will be.

Mechanical switch requirements are another matter. All traffic to be delivered to the call-carrying apparatus must include the holding time factor as well as the calling rate, because as long as each call is in progress the apparatus is being used. This is similar to the method for determining trunk requirements as trunks are a call-carrying agency. If there are any tie lines in the installation they should be converted to at least one-way dial operation.

As outlined in Chapter 3, in my book "Cost Reductions In Wire Communications" (Christopher Publishing House, 1140 Columbus Ave., Boston, Mass.), the cost of dial apparatus depends upon the rate structure in the particular area involved. In the modern dial installations there are three groups of mechanical switches, Line Finders, Selectors and Connectors. In some areas Line Finders are charged for, while in other areas there is no charge applied. All areas (except New York) charge for Selectors and Connectors. In any event, a five-year contract is involved for all dial installations and the mechanical apparatus pertaining thereto. There are only one or two known areas in which an installation charge is made in lieu of the five-year contract. In New York State an installation charge is applied as well as a five-year contract.

All switch requirements are based upon the number of hundred-second calls (CCS's) arrived at from the traffic study. Due to the fact that the interior calls in the great majority of installations represent about 65 per cent of the total traffic, it is obvious that most of the switches are used for that purpose.

Customer personnel are not trained to make studies in connection with the mechanical switches. In the absence of such training, this type of traffic study must be delegated to telephone company personnel.

The various methods of trunk categories in dial installations, together with information regarding Dial Tie Lines, Repeating Tie Lines, Recording Meters, and other pertinent data is outlined in complete detail in Chapter IV of my book, "Cost Reductions in Wire Communications."

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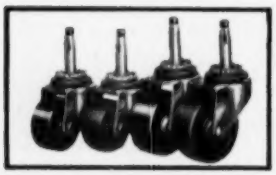

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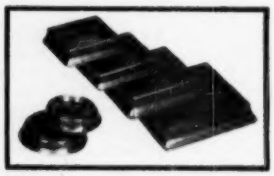

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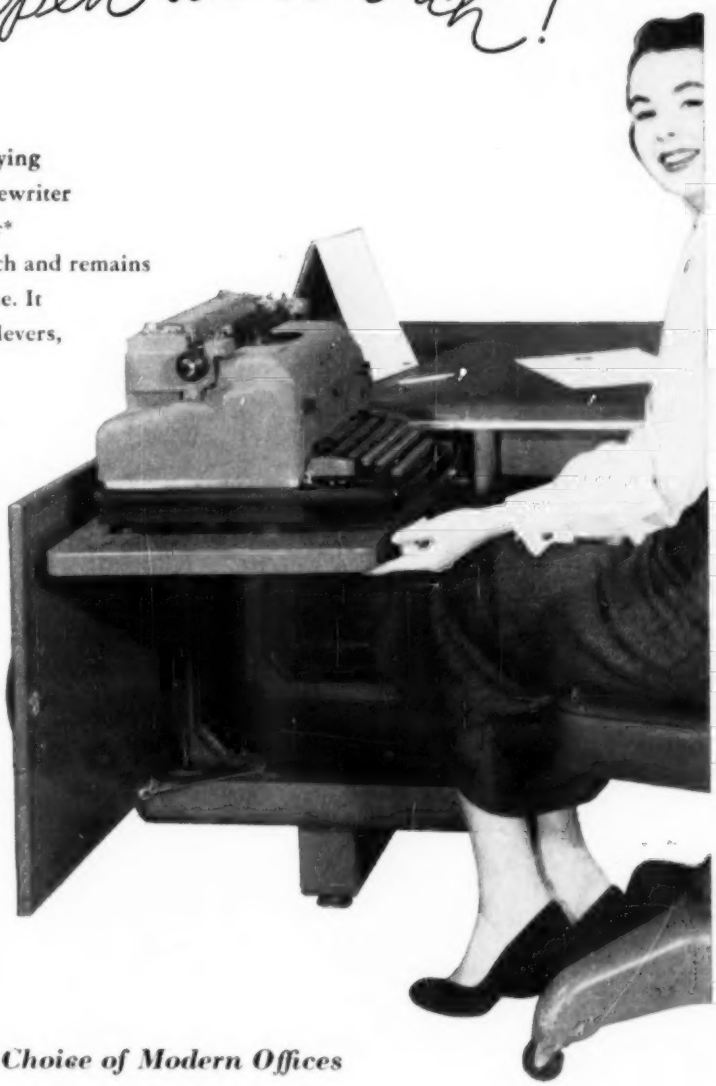

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